

1 UNITED STATES DISTRICT COURT
2 FOR THE NORTHERN DISTRICT OF OHIO
3 EASTERN DIVISION

4 IN RE: NATIONAL) MDL No. 2804
5 PRESCRIPTION OPIATE)
6 LITIGATION) Case No.
7) 1:17-MD-2804
8)
9 THIS DOCUMENT RELATES TO) Hon. Dan A.
10 ALL CASES) Polster
11)

12 Friday, April 26, 2019
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14
15

16 HIGHLY CONFIDENTIAL - SUBJECT TO FURTHER
17 CONFIDENTIALITY REVIEW
18 — — —
19
20

21 Videotaped Deposition of G. CALEB
22 ALEXANDER, M.D., M.S., held at the Law
23 Offices of Peter Angelos, 100 North Charles
24 Street, Suite 2200, Baltimore, Maryland,
25 commencing at 9:03 a.m., on the above date,
before Michael E. Miller, Fellow of the
Academy of Professional Reporters, Registered
Diplomate Reporter, Certified Realtime
Reporter and Notary Public.

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1 PROCEEDINGS

2 (April 26, 2019 at 9:03 a.m.)

3 THE VIDEOGRAPHER: We're now on
4 the record. My name is David Lane,
5 videographer for Golkow Litigation
6 Services. Today's date is April 26th,
7 2019. Our time is 9:03 a.m.

8 This deposition is taking place
9 in Baltimore, Maryland in the matter
10 of National Prescription Opiate
11 Litigation. Our deponent today is
12 Dr. George Caleb Alexander, M.D., M.S.

13 Counsel will be noted on the
14 stenographic record. The court
15 reporter today is Mike Miller, who
16 will now swear in the witness.

17
18 G. CALEB ALEXANDER, M.D., M.S.,
19 having been duly sworn,
20 testified as follows:

21 EXAMINATION

22 BY MR. SNAPP:

23 Q. Good morning, Dr. Alexander.
24 I'm Erik Snapp, I represent the Purdue
25 defendants. I'll be asking you the initial

1 set of questions today.

2 First of all, have you been
3 deposed before?

4 A. No, I have not.

5 Q. So let me just give you a few
6 ground rules. First of all, it's really
7 important that we not speak over each other,
8 so if you'd wait until I finish my question
9 before you start your answer, Mike here will
10 be able to get down a better record.

11 Second of all, if you have any
12 questions or if my questions are unclear,
13 please let me know and I'll try to clarify my
14 questions. Otherwise, I'll assume that you
15 understand my questions; is that fair?

16 A. Yes, it is.

17 Q. Okay. Very good.

18 You understand that you're here
19 testifying in a case that's set to go to
20 trial in Ohio in October? Do you understand
21 that?

22 A. I do.

23 Q. And have you been asked to
24 testify at trial in this case? Have you been
25 asked to set aside any time to testify at

1 trial?

2 A. No, I have not.

3 Q. Do you anticipate that you will
4 be testifying at trial?

5 A. I don't know.

6 Q. One other thing. At any time,
7 if you need a break, just let me know and
8 we'll take a break, a short break, as long as
9 there's not a question pending.

10 Fair enough?

11 A. Yes.

12 Q. Okay. Good.

13 So, Doctor, I want to start by
14 trying to define some terms that were used in
15 your expert reports.

16 First of all, can you tell me,
17 when you use the term "opioids," what do you
18 mean?

19 A. It would depend upon the
20 context.

21 Q. Okay. Can you explain?

22 A. In -- you know, without looking
23 at the report, you know, it's hard to provide
24 a specific instance or example, but in
25 general, I'm probably referring to both

1 prescription and nonprescription opioids.

2 Q. And when you're talking about
3 nonprescription opioids, what are you
4 referring to?

5 A. Once again, it would be helpful
6 to know the specific context within the
7 report, but generally, heroin and illicit
8 fentanyl and fentanyl derivatives.

9 Q. How do you define opioid use
10 disorder? And if you want to know what I'm
11 referring to, in paragraph 40 of your report,
12 which I'll show you in a little bit -- you'll
13 just have to take my word for it now unless
14 you want to see it -- you referred to the
15 formal criteria for an opioid use disorder.
16 But I didn't see those formal criteria listed
17 anywhere in your report, so what are those?

18 MS. RITTER: Objection, form.
19 It's compound.

20 MR. SNAPP: Let me just ask a
21 new question.

22 BY MR. SNAPP:

23 Q. What are the formal criteria
24 for an opioid use disorder?

25 A. Well, having referred to my

1 report, it would be helpful to see the report
2 so that I could see the context.

3 MR. SNAPP: Let's mark the
4 report.

5 (Whereupon, Deposition Exhibit
6 Alexander-1, Alexander Supplemental
7 Expert Report, was marked for
8 identification.)

9 BY MR. SNAPP:

10 Q. Doctor, I'm handing you what
11 I've marked as Deposition Exhibit 1, which is
12 the report that we received from plaintiffs'
13 counsel on April 3rd, which was your
14 supplemental expert report, expert witness
15 report, and it was in paragraph 40 that you
16 referred to formal criteria for an opioid use
17 disorder.

18 MR. SNAPP: And I can send you
19 one of these over.

20 MS. RITTER: That would be
21 good. I just don't want to have --

22 MR. SNAPP: It's going to be a
23 challenge with all the screens, but
24 we'll make it work.

25 (Document review.)

1 A. So I think elsewhere in my
2 report I refer to another's expert report in
3 terms of providing precise definitions for
4 many of the terms that I use like "opioid use
5 disorder," such as that term.

6 BY MR. SNAPP:

7 Q. And who -- who was that? Which
8 expert?

9 A. Katherine Keyes.

10 Q. Okay. How do you define
11 "nonmedical opioid use"?

12 A. Once again, I think that I --
13 in my report, I refer to her report for
14 providing definitions for these terms.

15 Q. So sitting here today, you
16 don't know those definitions based on your
17 experience?

18 A. I'm sorry, can you restate
19 that, please.

20 Q. Sitting here today, when I'm
21 asking you questions about these issues,
22 you're not able to tell me what the formal
23 criteria for "opioid use disorder" is or the
24 definition of "nonmedical opioid use"; is
25 that fair?

1 A. No.

2 Q. That's not correct?

3 A. Correct.

4 Q. Okay. So tell me what the
5 criteria are, the definition.

6 A. So, for example, for -- you
7 know, when I consider nonmedical use of
8 opioids, generally I'm referring to use for
9 durations or for purposes other than for
10 which the product has been prescribed or
11 as -- or for use for the feeling that it
12 provides to the user.

13 And generally, you know, these
14 individuals -- so I would -- that's how I
15 would define it.

16 Q. Is that the same as abuse?

17 A. No.

18 Q. Is it the same as misuse?

19 A. I mean, I think that these are
20 all distinct and important terms that capture
21 different concepts pertaining to how opioids
22 are used by individuals.

23 Q. I'm just trying to understand
24 how you used some of these terms in your
25 report. I understand you want to look at the

1 report, but how do you define "abuse" and
2 "misuse," if not the same as nonmedical
3 opioid use?

4 A. Well, I think all of these
5 capture concepts regarding the use of
6 products for indications or for reasons other
7 than for which they have been prescribed.

8 Q. And abuse can also happen when
9 they haven't been prescribed to the person
10 using the product, right?

11 A. Can you restate that, please.

12 Q. So abuse exists or occurs also
13 when the person using the product was not the
14 person who was originally prescribed the
15 product?

16 A. Yes.

17 Q. Now, how do you define the
18 "opioid epidemic," as you used that term in
19 your report, throughout your report?

20 A. Well, the epidemic as a concept
21 refers to an outbreak of a disease or
22 morbidity within a constrained geographic
23 area and within a time period greater than
24 what would be expected normally to occur.

25 Q. When you use that term, is it

1 the same as the term "opioid crisis" that's
2 sometimes used? Opioid epidemic and opioid
3 crisis, are they the same?

4 A. I mean, I think they capture
5 similar elements.

6 Q. I'm just trying to make our day
7 go faster. So if I use the term "opioid
8 crisis" instead of "opioid epidemic" at some
9 point, will you understand that I'm referring
10 to the same phenomenon?

11 A. For the purposes of this
12 discussion? You're asking me -- are you
13 asking me to treat these as synonymous?

14 Q. Well, do you view them as
15 synonymous?

16 A. I mean, I think the epidemic is
17 a bit more of a scientific and public health
18 term, but I'm -- but I'm willing to treat
19 them as such for this conversation.

20 Q. Fair enough. Thank you.

21 When did the current opioid
22 epidemic begin?

23 A. I think it depends.

24 Q. On what?

25 A. On many different factors. On

1 where one looks, on how precisely one -- on
2 knowledge of the magnitude of harms
3 occurring, of information about how much
4 harms over what amount of time in what
5 geographic area and the like.

6 Q. Well, are you going to be
7 providing testimony at trial related to when
8 the opioid epidemic began?

9 A. I don't know.

10 Q. Well, I'm just trying to
11 understand your testimony. This is my one
12 chance -- this is one chance for all the
13 defendants here today to ask you questions
14 about these issues before trial, so I'm just
15 trying to understand.

16 If you're going to testify that
17 the opioid epidemic began on -- in such and
18 such year, I want to know what that year was.

19 A. I think what there's no
20 controversy about is that there's a current
21 epidemic, and that as I outline in my report,
22 that there are many evidence-based methods to
23 abate it.

24 Q. Has -- okay. So you don't have
25 an answer as to when the opioid epidemic

1 began?

2 MR. ARNOLD: Objection,
3 mischaracterizes --

4 MR. SNAPP: I'm sorry, who is
5 going to be objecting? Are you going
6 to be objecting or are you going to be
7 objecting?

8 MR. ARNOLD: My understanding
9 is that the order allows for two
10 people.

11 MR. SNAPP: Okay. So one of
12 you represents Summit and the other
13 represents Cuyahoga? Is that --

14 MS. RITTER: I don't think we
15 have to do that. We represent the
16 plaintiffs in the MDL, whatever.

17 MR. ALEXANDER: It's one
18 objection per party.

19 MR. SNAPP: Yeah, it's one per
20 party. If you represent the
21 plaintiffs, then one of you objects.

22 MS. RITTER: Okay. Objection
23 to the form.

24 MR. SNAPP: Thank you.

25 BY MR. SNAPP:

1 Q. So, Dr. Alexander, can you tell
2 me when the current opioid epidemic or opioid
3 crisis began?

4 A. In my report I outline what I
5 believe to be the genesis of the epidemic
6 dating back to the late 1980s or the 1990s.

7 Q. So the epidemic -- the genesis
8 of the epidemic was in the 1980s, you're
9 saying? Is that your expert testimony?

10 A. Well, in my report I discuss my
11 belief that the genesis of the epidemic lies
12 in the late 1980s and the 1990s.

13 Q. Fair enough.

14 Has the opioid crisis or
15 epidemic changed during the time from the
16 1980s and early 1990s to the present in terms
17 of the compounds involved?

18 A. Yes, it has.

19 Q. How so?

20 A. Can you be more specific,
21 please?

22 Q. I'm just trying to understand
23 how it's changed since it began in the late
24 1980s and early 1990s.

25 A. There have been many changes

1 over this time period.

2 Q. Will you be testifying at trial
3 about any of those changes?

4 A. Once again, it's not clear to
5 me whether or not I would be testifying in
6 this case.

7 Q. If you testify at trial, do you
8 have opinions as to what those changes in the
9 compounds that have been the focus of the
10 opioid crisis or epidemic -- do you have
11 opinions as to how those compounds have
12 changed over time?

13 MS. RITTER: Objection to form.

14 BY MR. SNAPP:

15 Q. For example --

16 MS. RITTER: I'm sorry, you
17 weren't finished. Go ahead.

18 MR. SNAPP: Let me clarify.

19 MS. RITTER: Yeah.

20 BY MR. SNAPP:

21 Q. Do you agree that the current
22 opioid crisis or epidemic is a crisis of
23 illicit fentanyl and heroin?

24 A. Are you asking whether I
25 believe that it's a crisis of these alone?

1 Q. Do you believe those are the
2 primary compounds involved in the current
3 opioid crisis?

4 A. I think there's enormous
5 morbidity and mortality occurring from both
6 prescription and illicit opioids at this
7 time.

8 Q. So how do you define the
9 current opioid crisis in comparison to the
10 opioid crisis in the late 1980s and
11 early '90s when it began?

12 A. Well, far too many people are
13 dying from both prescription and illicit
14 opioids over this time period. More
15 individuals in the early years of the
16 epidemic prescription opioid -- prescription
17 opioids may have accounted for a greater
18 fraction of the morbidity than now relative
19 to heroin and illicit fentanyl.

20 Q. So, Dr. Alexander, I want to
21 shift gears. You're a medical doctor, right?

22 A. Yes, I am.

23 Q. And you're relying in part on
24 your experience as a medical doctor to
25 testify today for your opinions?

1 A. Yes, I am.

2 Q. So let's see if there are some
3 things that we can actually agree on.

4 Do you agree that chronic pain
5 is a serious medical condition?

6 A. Yes, I do.

7 Q. And do you agree that chronic
8 pain affects millions of people in the U.S.?

9 A. Yes, I do.

10 Q. Do you agree that chronic pain
11 affects people in Summit County, Ohio and
12 Cuyahoga County, Ohio?

13 A. I do.

14 Q. Do you agree that there are
15 risks associated with untreated chronic pain?

16 A. Yes, I do.

17 Q. Do you agree that every patient
18 must be treated individually?

19 A. Can you rephrase that or be
20 more specific?

21 Q. Well, do you agree as a medical
22 doctor that when you see a patient, you need
23 to treat that patient as an individual based
24 on that person's particular medical
25 presentation and circumstances?

1 A. I do.

2 Q. Do you agree that no single
3 treatment option will be appropriate for
4 every chronic pain patient?

5 A. Are you asking whether I
6 believe that there's one treatment that could
7 be applied to every patient?

8 Q. Yes.

9 A. I do not.

10 Q. And do you agree that it's
11 important for physicians like yourself to
12 have a variety of treatment options to choose
13 from when treating a medical condition such
14 as pain?

15 A. I do.

16 Q. Do you agree that all
17 treatments for chronic pain have risks?

18 A. Yes.

19 Q. Do you agree that it's the role
20 of the prescribing physician to weigh the
21 risks and benefits of any pain medication
22 when treating an individual patient?

23 A. I do.

24 Q. And you agree that a physician
25 should use his or her best judgment when

1 deciding whether to prescribe a medication?

2 A. I do. I do, but, you know,
3 physicians are -- I think physicians are
4 trying to do the best thing and do right by
5 their patients, including to treat them
6 individually, but physicians are -- you know,
7 their knowledge of treatment options is
8 impacted by the information that they receive
9 about the safety and effectiveness of
10 treatments, and that includes information
11 from pharmaceutical manufacturers as well as
12 through third-party organizations and others
13 that may shape the way that they practice and
14 their approaches to treating conditions.

15 Q. It also includes information
16 that they receive in medical school, correct?

17 A. Can you state that again,
18 please?

19 Q. Well, you just testified that
20 prescribing physicians' decisions are
21 impacted by certain things that you listed.

22 MS. RITTER: Objection --

23 BY MR. SNAPP:

24 Q. And I'm asking if that decision
25 with respect to prescribing decisions is also

1 impacted by the information that they receive
2 while in medical school.

3 MS. RITTER: Objection, form.

4 That's a different question.

5 A. Yes, I believe it is.

6 BY MR. SNAPP:

7 Q. And physicians also learn about
8 the prescriptions -- the prescription
9 medications that they're prescribing through
10 looking at the prescribing information that's
11 FDA approved, right?

12 A. Can you ask that again, please?

13 Q. Do doctors learn about the
14 drugs that they're prescribing by looking at
15 and reading and understanding the prescribing
16 information that's been FDA approved for a
17 particular drug?

18 A. I would say some doctors in
19 some instances, yes.

20 Q. They should, right? They
21 should understand those risks and benefits
22 that are listed in the FDA-approved labeling?

23 A. Yes.

24 Q. And they also receive
25 information from continuing medical education

1 programs that are put on by organizations
2 like Johns Hopkins, right?

3 A. Some may, yes.

4 Q. So just so we're clear, the
5 information that doctors base their
6 prescribing decisions on is not solely
7 information they receive from pharmaceutical
8 companies or third parties, right?

9 A. That's -- yes, I believe that's
10 true.

11 Q. They also might review medical
12 journal articles that provide information
13 that guide their prescribing decisions; fair
14 enough?

15 A. Some -- you know, all of these,
16 I would say some -- some may, yes.

17 Q. Dr. Alexander, do you agree
18 that opioid medications are Schedule II
19 controlled substances under the Controlled
20 Substances Act?

21 A. Yes.

22 Q. And you understand that
23 Schedule II controlled substances are defined
24 as substances that, and I'm quoting, have a
25 high potential for abuse which may lead to

1 severe psychological or physical dependence.

2 You understand that, right?

3 A. Yes.

4 Q. Do you agree that opioid
5 medications are approved by the FDA as safe
6 and effective for their intended use?

7 A. I'm sorry, can you ask that
8 again?

9 Q. I'll rephrase it.
10 Do you agree that the opioid
11 medications that are on the market today are
12 approved by the FDA as safe and effective for
13 their intended use?

14 A. So you're asking me whether I
15 believe that the opioids are -- you know,
16 what the evidentiary basis is for approval
17 or --

18 Q. No, I'm asking you if the FDA
19 has approved the opioid medications that are
20 on the market today as safe and effective for
21 their intended use?

22 A. Yes, I believe they have.

23 Q. Do you know that? Okay.

24 And do you agree that different
25 opioids can have different side effects?

1 A. Yes, I do.

2 Q. Do you agree that the
3 scientific data regarding opioids has changed
4 over time?

5 A. Yes, I do.

6 Q. Do you agree that individual
7 patients can react differently from other
8 patients to the same opioid medication?

9 A. Yes, I do.

10 Q. Do you agree that the
11 scientific data regarding opioid medications
12 will continue to evolve over time?

13 A. I do.

14 Q. Similarly, there's some
15 opinions in your report related to HIV and
16 hepatitis treatments. Do you remember those
17 opinions?

18 A. In broad form, although it
19 would be helpful if you're asking specific
20 questions --

21 Q. I just have a general question.

22 A. Okay. Yeah.

23 Q. I just want to confirm. Is it
24 fair to say, similar to the scientific data
25 regarding opioid medications, that the

1 scientific data regarding HIV and hepatitis C
2 treatments will also evolve over time?

3 A. Yes, I believe it will.

4 Q. Do you agree that a physician
5 prescribing opioid medications should
6 consider and monitor the potential for abuse,
7 misuse, addiction and diversion?

8 A. Yes, I do.

9 Q. And are you aware that the FDA
10 product labeling for some of the opioids
11 involved in this litigation actually inform a
12 prescriber that they should do that?

13 A. I believe the labeling has
14 changed over time. Are you asking about the
15 current labeling?

16 Q. Well, the labeling for the --
17 sure, let's talk about the current labeling.

18 A. Okay.

19 Q. The current labeling informs
20 doctors that they should monitor the
21 potential for abuse, misuse, addiction and
22 diversion, correct?

23 A. Yes.

24 Q. Do you agree that in some
25 patients, opioids may be the only effective

1 treatment for chronic noncancer pain?

2 A. Yes.

3 Q. Do you agree that in some
4 patients, opioid medications may be the most
5 effective treatments for chronic pain?

6 A. Yes.

7 Q. Dr. Alexander, do you agree
8 that opioid medications should be available
9 to doctors and patients on the market today?

10 A. I do.

11 Q. Do you agree that opioid
12 medications are an appropriate treatment for
13 chronic pain related to cancer?

14 A. You know, it depends on the
15 context.

16 Q. Of course.

17 Generally speaking, do you
18 believe that opioid medications should be
19 available as a treatment option for chronic
20 pain related to cancer?

21 A. Yes.

22 Q. Do you agree that opioid
23 medications are an appropriate treatment
24 option for acute pain?

25 A. Once again, it depends on the

1 context.

2 Q. In certain circumstances, do
3 you agree that opioid medications are an
4 appropriate treatment for acute pain?

5 A. I do.

6 Q. And do you agree that in
7 certain circumstances opioid medications are
8 an appropriate treatment option for
9 post-surgical pain?

10 A. Once again, it depends on the
11 context. In certain circumstances, yes.

12 Q. Do you agree that the majority
13 of patients who have ever been prescribed an
14 opioid have not gotten addicted? That's an
15 imprecise question, let me reask the
16 question.

17 Do you agree that the majority
18 of patients who have been prescribed an
19 opioid medication have not become addicted to
20 that opioid medication?

21 A. I do.

22 Q. Doctor, do you agree that
23 addiction can occur with other medications as
24 well?

25 A. What type of addiction?

1 Q. I'm sorry. I'm just asking --
2 let me just ask a different question.

3 So do you agree that addiction
4 can occur with illegal drugs?

5 A. Yes.

6 Q. Do you agree that addiction can
7 occur with illegal use of opioid medications?

8 A. Yes.

9 Q. And addiction can occur with
10 alcohol?

11 A. Yes.

12 Q. Addiction can occur with
13 tobacco and nicotine?

14 A. You know, I mean, we don't talk
15 about tobacco use disorder, but certainly
16 people are dependent on tobacco and use it
17 habitually, yes.

18 Q. Do you agree that people can
19 become addicted to using their smartphones?

20 A. Here again, you know, my report
21 focuses on opioid use disorder and ways to
22 abate it in Cuyahoga and Summit Counties.

23 Q. Let me go back to opioid
24 prescriptions, opioid medications. Do you
25 agree that individuals can -- can and do

1 become addicted to opioids without ever
2 obtaining a legal prescription for the
3 medication?

4 A. I'm sorry, can you ask the
5 question again, please?

6 Q. Certainly.

7 Do you agree that an individual
8 can become addicted to opioids without ever
9 obtaining a legal prescription for a
10 medication -- for an opioid medication?

11 A. Can they become addicted to
12 prescription opioids or to other -- heroin or
13 illicit fentanyl?

14 Q. Well, let's start with
15 prescription opioids.

16 A. Okay. Yes, I do.

17 Q. What about heroin and fentanyl?

18 A. Yes, I do.

19 Q. Do you agree that the question
20 of who may become addicted is highly
21 individualized?

22 A. Can you say more about what you
23 mean by highly individualized, please?

24 Q. Well, I'm just trying to
25 understand. If a -- my question is simply:

1 Do you agree that if you're trying to
2 identify people who might become addicted to
3 a particular substance, that inquiry is
4 highly individualized, correct?

5 A. What do you mean by inquiry?
6 Are you asking whether I think it's easy to
7 predict who --

8 Q. Sure.

9 A. I do not.

10 Q. Do you agree that
11 nonprescription pain medications taken at
12 inappropriate doses can cause serious side
13 effects?

14 A. Nonprescription pain medicines?

15 Q. Correct.

16 A. Such? Can you give me an
17 example or two?

18 Q. Acetaminophen.

19 A. And when taken at what doses?

20 Q. Inappropriate doses, high
21 doses.

22 A. I do.

23 (Whereupon, Deposition Exhibit
24 Alexander-2, Alexander Expert Report,
25 was marked for identification.)

1 BY MR. SNAPP:

2 Q. I'm just going to take care of
3 some housekeeping, Dr. Alexander.

4 A. Okay.

5 Q. This is Deposition Exhibit 2,
6 and this is your original March 25th expert
7 report.

8 A. Okay.

9 (Whereupon, Deposition Exhibit
10 Alexander-3, Alexander Supplemental
11 Expert Report Update, was marked for
12 identification.)

13 BY MR. SNAPP:

14 Q. And finally, I'm going to mark
15 as Deposition Exhibit 3 a three-page document
16 that we received on April 17th that's titled
17 G. Caleb Alexander, M.D., M.S., Supplemental
18 Expert Report Update.

19 Do you recognize
20 Deposition Exhibits 2 and 3 to be your
21 reports in this case, two of the three
22 reports in this case?

23 A. I do.

24 Q. Dr. Alexander, have you served
25 as an expert witness previously, before this

1 case?

2 A. I've testified before the U.S.
3 Senate and the U.S. House of Representatives
4 and the FDA, but I've not served in a -- I've
5 not testified in this context previously.

6 Q. So the reports that I put in
7 front of you as Deposition Exhibits 1, 2 and
8 3, are those accurate?

9 A. Well, the most recent update,
10 Exhibit 3, represents my best estimates
11 regarding the matters to which Exhibit 3
12 speaks and so -- and, you know, but anything
13 that's not updated in Exhibit 3 that was
14 present in Exhibit 2, yes, I would say is
15 accurate in reflecting my best thinking about
16 the matter.

17 Q. Fair enough.
18 So Exhibit 3 made some
19 corrections to Exhibit 2; is that fair, made
20 it more accurate?

21 A. Well, I think Exhibit 3
22 provides better estimates for the courts to
23 consider.

24 Q. Well, do these exhibits contain
25 all of your opinions that you intend to

1 testify about at trial?

2 A. Once again, I don't know
3 whether I'll be testifying, and I don't feel
4 that I can answer that question.

5 Q. Well, is there anything that's
6 not included in these reports that you intend
7 to testify about at trial, if you testify? I
8 understand you don't know if you're going to
9 testify.

10 A. Not at this time. I'm not --
11 there's nothing that I'm -- not at this time.

12 Q. So we've received two
13 supplements or amendments to your reports.
14 Do you anticipate providing any additional
15 supplements or amendments to your reports?

16 A. I don't anticipate doing so at
17 this time.

18 Q. Did you bring any documents or
19 anything with you today to the deposition?

20 A. No, I did not.

21 Q. Tell me what you did to prepare
22 for this deposition today.

23 A. I reviewed my report. I
24 reviewed my report.

25 Q. Which one did you review?

1 A. All of them.

2 Q. Okay.

3 A. All three of these exhibits.

4 Q. Okay.

5 A. I had several phone
6 conversations with members of my team that I
7 supervised in the process of developing these
8 estimates, and I met with counsel, and I
9 reviewed a number of references and cited
10 material that I relied upon to produce my
11 report.

12 And I think those were the --
13 those were the major four -- I believe there
14 were four. Those were the major four
15 activities that I undertook.

16 Q. Okay. So did you meet with
17 Ms. Ritter?

18 A. I did.

19 Q. Any other attorneys?

20 A. Yes.

21 Q. Who else did you meet with?

22 A. I don't know their names, but
23 there's a written record of it, I would
24 imagine.

25 Q. And when you say there's a

1 written record, are you referring to billing
2 records?

3 A. No. No. So I traveled to
4 Charleston, and there were several attorneys
5 in the room.

6 Q. When did you -- when did that
7 meeting take place?

8 A. About two weeks ago.

9 Q. How long were you there?

10 A. In the room or in the city?

11 Q. Well, just -- I just want to
12 understand how long the meetings were.

13 A. It was a day trip.

14 Q. A day trip. So how long did
15 you meet with them?

16 A. Perhaps five hours.

17 Q. Other than the attorneys for
18 the plaintiffs, were any other individuals
19 present?

20 A. There, I believe, was at least
21 one, if not more than one, paralegal. There
22 was an attorney named Don whose, perhaps,
23 last name you're familiar with. I'm sorry
24 that I don't know his last name. So there
25 were one or more paralegals, and I believe

1 there was someone from an outside group also.

2 Q. Which outside group?

3 A. I believe it's a litigation
4 support group or something like that.

5 Q. Did this meeting in Charleston
6 take place before you provided the report
7 that's marked as Deposition Exhibit 2?

8 A. I don't believe so.

9 Q. I want to understand what else
10 you did to prepare your reports also. So you
11 mentioned that you talked with members of
12 your team that you supervised.

13 Are you talking about a -- who
14 are you speaking about when you talk about
15 members of your team?

16 A. Several individuals that worked
17 with me to build the models that I've
18 provided.

19 Q. Are these individuals employees
20 of Monument Analytics, your company?

21 A. Some.

22 Q. Well, tell me who they are.

23 Tell me who all these -- tell me who was on
24 your team that helped you put together these
25 reports.

1 A. Omar Mansour, M-A-N-S-O-U-R;
2 Francine Chingcuanco, C-H-I-N-G-C-U-A-N-C-O;
3 Ellen Hu, last name H-U; Jeromie Ballreich,
4 last name, B-A-L-L-R-E-I-C-H, I believe.
5 David Dowdy, D-O-W-D-Y; Harold Pollack,
6 P-O-L-L-A-C-K, and Josh Sharfstein.

7 So those are the --

8 Q. Seven people?

9 A. That -- yeah. Although with
10 varied roles, but yes.

11 Q. Okay. And which of those are
12 employees of your company?

13 A. Omar, Francine.

14 Do you mean full time or part
15 time?

16 Q. Part time.

17 A. Work --

18 Q. Full time.

19 A. Consultants. I mean --

20 Q. Whoever is getting paid by the
21 plaintiffs' counsel, through your company or
22 otherwise, as part of this --

23 A. Okay. I mean, some
24 participated very minimally, but all but
25 Joshua Sharfstein would meet your definition.

1 Q. Okay. So all of them somehow
2 are affiliated with your company,
3 Monument Analytics, except for
4 Mr. Sharfstein. Fair enough?

5 A. Yes.

6 Q. And are they all billing for
7 their time spent on this matter? Have they
8 been?

9 A. Yes.

10 Q. Do you know how much your firm
11 has -- well, first of all, I should clarify.

12 Is your time being billed to
13 the plaintiffs' counsel through your company
14 or separately?

15 A. Through my company.

16 Q. And your company is
17 Monument Analytics; is that correct?

18 A. Yes.

19 Q. So how much has your firm
20 billed the plaintiffs' counsel so far in this
21 litigation?

22 A. I don't know.

23 Q. Can you give me a ballpark
24 estimate?

25 A. I don't know.

1 Q. Is it more than a million
2 dollars?

3 MS. RITTER: Objection.

4 A. No, I do not believe so.

5 BY MR. SNAPP:

6 Q. Is it more than \$750,000?

7 A. Once again, I do not know, but
8 I do not believe so.

9 Q. Do you believe it's more than
10 \$500,000?

11 A. Since the -- since initial
12 engagement with this matter, with this
13 litigation, it could be.

14 Q. And when was that initial
15 engagement?

16 A. I don't know.

17 Q. Do you have -- was it last
18 month? Was it last summer?

19 MS. RITTER: Objection, asked
20 and answered.

21 MR. SNAPP: Well, let me
22 clarify.

23 BY MR. SNAPP:

24 Q. So we have some notes that
25 plaintiffs' counsel provided us of a meeting

1 that you attended apparently in Akron, Ohio
2 in July of 2018.

3 Did your engagement in this
4 matter occur prior to July of 2018?

5 A. Yes, it did.

6 Q. How far before? How much
7 before July of 2018 were you engaged by the
8 plaintiffs in this case?

9 A. I don't know.

10 Q. Was it six months, a year? I'm
11 just trying to -- just a ballpark. That's
12 all. I'm not asking for an exact date.

13 A. Sure. Sure. My guess is it
14 would be -- have been less than a year prior
15 to then, so that is my guess is it was more
16 recently than July 2017.

17 Q. Okay. Fair enough.

18 So it was more than a year ago
19 from now, we're sitting here in April of
20 2019. Would it have been more than a year
21 before now?

22 A. I don't know.

23 Q. Okay. I'm just trying to
24 understand how long you were spending putting
25 together these reports.

1 So it's at least sometime
2 before July of 2018, fair enough?

3 MS. RITTER: Objection to form.
4 It's mischaracterizing what he said.

5 THE WITNESS: Can you ask the
6 question again, please?

7 MR. SNAPP: I'm just trying to
8 understand. Let me ask a different
9 question.

10 BY MR. SNAPP:

11 Q. How long did it take you and
12 your team to put together the reports that
13 are marked as Deposition Exhibits 1, 2 and 3?

14 A. I don't know.

15 Q. Who would know?

16 A. Well, I've worked most
17 intensively on these reports over several
18 months.

19 Q. The last several months?

20 A. Yes.

21 Q. When did you start working
22 intensively on these reports?

23 A. I don't have a specific date.
24 I don't know.

25 Q. Well, was it in 2019 or 2018?

1 A. My guess is 2018.

2 Q. Okay. So, sir, in preparing
3 these reports, in preparing for your
4 testimony today, have you reviewed any
5 transcripts of testimony that was taken in
6 this matter?

7 MS. RITTER: Objection, form,
8 compound.

9 THE WITNESS: Can you restate
10 that, please.

11 BY MR. SNAPP:

12 Q. In your work on this case, have
13 you reviewed any transcripts of testimony
14 taken in this matter?

15 A. Testimony from whom?

16 Q. Anyone.

17 A. I do not recall reviewing any
18 transcripts of testimony at this time, no.

19 Q. Have you reviewed any
20 documents, internal company documents from
21 any of the defendants in this case as part of
22 your work on this case?

23 A. I don't recall at this time
24 having reviewed any internal company
25 documents.

1 Q. Sir, your report that's marked
2 as Exhibit 2 includes 488 references. Have
3 you reviewed each of those references?

4 A. They -- yes, insofar as they
5 served as a basis for my report.

6 Q. Did you write the report
7 yourself?

8 A. The vast majority of it, I did.
9 There were probably -- you know, of the 187
10 paragraphs, there are probably 10 or so that
11 someone else drafted and that I reviewed and
12 edited and substantively revised, and
13 ultimately, the report represents my own
14 views and my own expertise.

15 Q. Now, we mentioned -- I
16 mentioned earlier the meeting that you had in
17 Akron, Ohio in July 2018. I believe it was
18 described in your notes as a stakeholder
19 meeting; is that right?

20 A. Yes.

21 Q. Now, did you meet with anyone
22 in Cleveland?

23 A. There may have been Cleveland
24 representatives at the meeting. I do not
25 know.

1 Q. Did you meet with any
2 representatives of Cuyahoga County?

3 A. Once again, there may have been
4 representatives at the meeting. I do not
5 know.

6 Q. Did you meet with anyone from
7 Summit County?

8 A. Yes.

9 Q. And who did you meet with from
10 Summit County?

11 A. I do not know.

12 (Whereupon, Deposition Exhibit
13 Alexander-4, Questions Re: Treatment
14 and Recovery/Notes from Akron, was
15 marked for identification.)

16 BY MR. SNAPP:

17 Q. I'm just going to mark for the
18 record the notes of that meeting just so
19 we're clear. This is Deposition Exhibit 4.
20 I just want to be clear what we're speaking
21 about. I'll come back to those and ask some
22 questions about them later, but for now I
23 just want to mark them for the record so
24 we're all on the same page.

25 A. Okay.

1 Q. So you're saying it's possible
2 that you did meet with someone from Cuyahoga
3 and Cleveland, but you don't know?

4 A. Correct.

5 Q. Other than the meeting in
6 Akron, did you conduct any research in
7 Cuyahoga County or Summit County related to
8 this case?

9 A. Do you mean primary research
10 where I would interview patients, or what do
11 you mean by research?

12 Q. What do you mean by research?

13 A. Can you ask the question again,
14 please?

15 Q. I'm just trying to understand:
16 Other than the meeting in Akron --

17 A. Yeah.

18 Q. -- in July of 2018, did you do
19 anything else to -- do any research in the
20 counties that we're talking about, Cuyahoga
21 and Summit Counties?

22 A. I did. I did.

23 Q. What did you do?

24 A. I reviewed a variety of
25 materials that have been produced or provided

1 for this case that reflect the conditions on
2 the ground in these counties.

3 Q. And are those the materials
4 that we received with your expert report? We
5 received a list of materials that included
6 some task force reports and other things.
7 Are those the materials you're talking about?

8 A. Yes.

9 Q. And did you receive those
10 materials from counsel, plaintiffs' counsel?

11 A. Yes.

12 Q. So other than reviewing some
13 documents provided to you by plaintiffs'
14 counsel, you didn't do anything else to do
15 any research, conduct any research in
16 Cuyahoga and Summit Counties; is that fair?

17 A. Yes.

18 Q. Now, there were some changes to
19 your reports, and I want to start with
20 Deposition Exhibit 1 and Deposition
21 Exhibit 2, and I want to make sure I
22 understand the changes that you made between
23 Exhibit 1 and Exhibit 2.

24 MS. RITTER: Objection to the
25 form. And I think that they're

1 numbered the other way.

2 MR. SNAPP: I think you're
3 right.

4 MS. RITTER: Exhibit 2 is --
5 okay. Yeah.

6 MR. SNAPP: I think you're
7 right. Thank you for clarifying.

8 MS. RITTER: Okay.

9 BY MR. SNAPP:

10 Q. So Exhibit 2 is your original
11 report from March 25th. I want to understand
12 the differences between Exhibit 2 and the
13 April 3rd report that's marked as Exhibit 1.

14 Can you tell me, first of all,
15 why did you make changes?

16 A. I thought I could provide
17 better estimates.

18 Q. Okay. And why did you think
19 that?

20 A. In reviewing the components of
21 the -- in reviewing the estimates that we
22 provided, I identified areas where I thought
23 that we could make more conservative and
24 better estimates either of the population
25 within a given category or the costs

1 attributable to a population.

2 Q. And what specific changes did
3 you make?

4 A. For example, the --

5 Q. Which paragraph are you looking
6 at?

7 A. Just give me one minute,
8 please.

9 Q. Sure.

10 A. So, for example, the harm
11 reduction interventions category, I believe
12 in the original report, we did not estimate
13 the costs of fentanyl testing strips or
14 supervised consumption facilities, so those
15 were added in the supplemental report. And
16 that accounts for the increase in the
17 estimates costs for that category.

18 Q. And nationally, those increases
19 for all the categories were \$30.4 billion,
20 correct, the difference between Exhibit 2 and
21 Exhibit 1?

22 A. Yes.

23 Q. When you map that out using the
24 1.5% that you used to allocate a portion of
25 the national abatement costs to Cuyahoga and

1 Summit Counties, that difference is
2 \$450 million, correct?

3 A. I don't have that number in
4 front of me, but if that's -- but that sounds
5 like that could be the case.

6 Q. And just so I understand, is
7 there any reason you couldn't have done the
8 analysis that you did in the April 3rd report
9 for your March 25th report?

10 A. Well, those -- can you ask the
11 question again, please?

12 Q. I'm just trying to understand
13 why you didn't make -- why Exhibit 1, the
14 analysis that you conducted in Exhibit 1 was
15 something that you had to wait until after
16 the original deadline of March 25th --

17 A. Right. Right.

18 Q. -- to do.

19 A. So in reviewing the estimates
20 that were provided, I felt that there were
21 better estimates that could have been
22 provided in these instances, and so that's
23 why I submitted a supplemental report.

24 But in my report, I identify
25 both that -- this is a framework, really.

1 This is intended as a framework for the
2 communities and the courts to consider as the
3 costs of abatement are -- are evaluated, and
4 also that, you know, detailed assessments of
5 the costs for Cuyahoga and Summit Counties
6 are another matter.

7 This is really meant just to
8 provide an overall framework at a national
9 level for the potential costs of abatement.

10 Q. And so the detailed assessments
11 of the cost of Cuyahoga and Summit Counties
12 in terms of abatement costs, you said those
13 are another matter, and you didn't attempt to
14 do those, did you?

15 A. I did not.

16 Q. Now, if you look at
17 Deposition Exhibit 3, which is the three-page
18 document that we received on April 17th --

19 A. Uh-huh.

20 Q. -- there were a number of
21 changes or corrections to your redress model
22 that are included on the first page, correct?

23 A. Yes.

24 Q. And then on the second and
25 third page, you discuss Scenarios A, B, C,

1 and D; is that right?

2 A. Yes.

3 Q. And these are four different
4 ways of looking at national abatement costs,
5 correct?

6 A. Yes.

7 Q. And are these -- do these
8 scenarios that are listed on the second and
9 third page of Deposition Exhibit 3, do those
10 scenarios replace the abatement cost
11 conclusion in paragraph 180 of
12 Deposition Exhibit 1?

13 A. So if you're asking whether the
14 452.9 billion figure in paragraph 180 of
15 Exhibit 1 should be replaced by one of
16 these -- so that value is the same value as
17 Scenario A.

18 Q. Correct.

19 A. And so can you please ask a
20 question again about that?

21 Q. Certainly.

22 So Scenario 3 --

23 A. Yes.

24 Q. -- is the original model --

25 A. Yes.

1 Q. -- with the corrections that
2 are listed on Table 1 --

3 A. Correct.

4 Q. -- of Deposition Exhibit 3,
5 correct?

6 A. Yes.

7 Q. So is it fair to say that those
8 corrections essentially remove from your
9 analysis Scenario A?

10 A. Yes.

11 Q. And I noticed that in this
12 exhibit that we've marked as
13 Deposition Exhibit 3, which is your updated
14 April 17th supplemental report, you did not
15 do a Cuyahoga- and Summit-specific mapping
16 calculation that you had done previously in
17 the other exhibits.

18 A. Uh-huh.

19 Q. Will you be restricting your
20 testimony -- I guess I'm just trying to
21 understand.

22 Is Deposition Exhibit 3 -- it
23 seems to show that your testimony will only
24 focus on national abatement costs at this
25 point; is that correct?

1 A. Well, I don't -- as I said, I
2 don't know if I'm testifying.

3 Q. Understood. But do you have --
4 I didn't see any attempt in Deposition
5 Exhibit 3 to allocate Scenario B, C and D to
6 Cuyahoga and Summit Counties.

7 A. Is that a question or can you
8 ask a question about --

9 Q. Well, is there some attempt?
10 Did I just miss it I guess is the question?

11 A. No, you did not.

12 Q. Okay. So you have not done
13 that next step to try to take these abatement
14 costs that are listed in Deposition Exhibit 3
15 and figure out which portion of the national
16 abatement costs are apportioned to Cuyahoga
17 and Summit Counties; is that fair?

18 MS. RITTER: Objection to the
19 form.

20 A. Yes, that's fair.

21 BY MR. SNAPP:

22 Q. Do you intend to do so?

23 A. Not at this time.

24 THE WITNESS: Can we do a
25 five-minute break at your convenience?

1 MR. SNAPP: Absolutely. This
2 is a good time.

3 THE WITNESS: Okay. Very good.

4 THE VIDEOGRAPHER: Going off
5 the record at 10:05 a.m.

6 (Recess taken, 10:05 a.m. to
7 10:15 a.m.)

8 THE VIDEOGRAPHER: We're back
9 on the record at 10:15 a.m.

10 (Whereupon, Deposition Exhibit
11 Alexander-5, Alexander Curriculum
12 Vitae, was marked for identification.)

13 BY MR. SNAPP:

14 Q. Dr. Alexander, I've handed you
15 what's been marked as Deposition Exhibit 5,
16 which is your CV that was provided to us.
17 I'm not going to spend a lot of time on it.
18 I just want to understand: Is this your
19 current CV?

20 A. Well, I may have an update, you
21 know, on my desktop from April, but it
22 reflects a recent CV.

23 Q. Okay. Do you have any
24 additions you'd like to make to it at this
25 time? I guess a better question would be:

1 The one on your desktop, have you made
2 additions to that in the last couple of
3 months? Because this one is marked -- it's
4 dated February 2019.

5 A. I was promoted to full
6 professor.

7 Q. Congratulations.

8 A. Thank you.

9 Q. Other than being promoted to
10 full professor, are there any other changes
11 you can think of?

12 A. There are -- I mean, the most
13 relevant would be additional publications.

14 Q. Okay. Can you think of any in
15 particular that you've published since
16 February of 2019? Looks like the last one is
17 on page 25. There's a publication
18 number 243.

19 A. No, I cannot.

20 Q. Okay. Are you board certified?

21 A. Yes, I am.

22 Q. In what?

23 A. Internal medicine.

24 Q. Okay. I see that right down at
25 the bottom of page 1; is that right? Am I

1 looking in the right place, Medical Board
2 Certification?

3 A. Yes.

4 Q. But just so we're clear, you're
5 not a pharmacist, are you?

6 A. No, I'm not.

7 Q. And you're not a
8 pharmacologist?

9 A. No, I am not.

10 Q. Are you a toxicologist?

11 A. No, I am not.

12 Q. Are you an economist?

13 A. No, I am not.

14 Q. Are you a statistician?

15 A. I wouldn't call myself a
16 statistician, but as with pharmacology and
17 economics, I use these as part of my
18 professional activities as a
19 pharmacoepidemiologist.

20 Q. Just so we're clear, you don't
21 have any degrees in statistics?

22 A. No, I do not.

23 Q. And you don't have any
24 certifications as a statistician, if there
25 are any available?

1 A. No, I do not.

2 Q. And are you an epidemiologist?

3 A. Yes, I am.

4 Q. Do you have any degrees or
5 certifications in epidemiology?

6 A. I have a master's in science
7 from the University of Chicago, and that
8 included training in epidemiology.

9 Q. What was your master's in?

10 A. Well, it was awarded through
11 the Department of Health Studies, and it
12 focused heavily on health studies, health
13 services research and epidemiology.

14 Q. Are you a pain management
15 specialist?

16 A. No, I am not.

17 Q. Are you an addiction
18 specialist?

19 A. No, sir.

20 Q. Are you a specialist in opioid
21 use disorder?

22 A. Are you asking whether I'm a
23 clinical specialist in these matters?

24 Q. Sure.

25 A. No, I am not.

1 Q. Do you consider yourself an
2 expert in FDA regulatory matters?

3 A. I consider myself knowledgeable
4 about regulatory matters, yes.

5 Q. Will you be offering any
6 opinions with respect to regulatory matters
7 in this case?

8 A. Once again, with the caveat
9 that I have no idea whether I would be
10 testifying or further involved in the case, I
11 was asked to develop estimates of the most
12 evidence-based programs -- you know, I was
13 asked to develop a national abatement program
14 based on my best judgments about the
15 scientific evidence. So I was not asked
16 about regulatory matters in this case.

17 Q. Okay. So will you be offering,
18 if you testify, any opinions with respect to
19 the regulatory history of any opioid
20 medicines?

21 A. I don't know, but I don't
22 anticipate so.

23 Q. You haven't done work in that
24 area in preparation for this case, have you?

25 A. No, I have not.

1 Q. And do you consider yourself a
2 marketing expert?

3 A. No, I do not. But as with the
4 other fields that I mentioned, these are --
5 the tools and methods and insights from these
6 fields are used by pharmacoepidemiologists.

7 Q. Understood. But you have
8 not -- I just want to make sure I understand.
9 I didn't see anything in your report
10 reflecting any work that you've done in this
11 case to evaluate any of the defendants'
12 marketing of opioid prescription drugs; is
13 that fair?

14 A. Can you state that as a -- or
15 say it as a question?

16 Q. Certainly.

17 Have you done any work in this
18 case to evaluate -- review and evaluate any
19 defendant's marketing for its prescription
20 opioid medicines?

21 A. No, I have not.

22 Q. Okay. So in this case, is it
23 fair to say that you're not offering any
24 opinions on any defendant's marketing?

25 A. I've not been asked -- I've not

1 been asked to do that in preparation of my
2 expert report.

3 Q. Have you been asked to provide
4 any opinions with respect to any defendant's
5 conduct historically, its historic conduct?

6 A. No, I have not.

7 Q. Have you been asked to provide
8 any opinions with respect to the cause of the
9 opioid crisis or opioid epidemic, as you put
10 it?

11 A. Yes, I have.

12 Q. And what opinions do you intend
13 to offer if you testify at trial with respect
14 to the cause of the opioid crisis?

15 A. May I look briefly at my
16 report?

17 Q. Certainly.

18 A. So paragraphs -- there are
19 paragraphs in my report that address what I
20 referred to as the genesis of the epidemic,
21 so I don't know if that answers your
22 question, but I guess my -- maybe you could
23 repeat your question for me.

24 Q. Which paragraphs are you
25 referring to, Doctor?

1 A. Could you repeat your question,
2 please, just so I'm sure I refer to the right
3 paragraphs.

4 Q. Well, I'm just trying to
5 understand if you have been asked to provide
6 opinions in this case with respect to the
7 cause of the opioid crisis or opioid
8 epidemic.

9 A. I mean, I'd say only in the
10 highest -- only at the highest level of
11 abstraction. I was asked to provide my best
12 judgments about what interventions should be
13 employed to abate the epidemic.

14 So in sort of laying the
15 groundwork for that in my report, I do
16 discuss, for example, in paragraph 16, the
17 modern opioid epidemic can be traced to the
18 1980s; paragraph -- paragraphs 31 through 34,
19 where I discuss misconceptions that I believe
20 must be addressed. So, for example, there's
21 a conflict between reducing opioid oversupply
22 and improving quality of care for people with
23 pain.

24 So those are the only places in
25 my report where I discuss -- that I think are

1 relevant to your question.

2 Q. So I'm just trying to
3 understand.

4 So will you be -- if you
5 testify at trial, do you expect to provide
6 testimony related to any defendant's
7 responsibility for the opioid crisis?

8 MS. RITTER: Objection, asked
9 and answered.

10 A. I will do my best to speak to
11 whatever I'm asked to speak to, but my report
12 that I submitted contains what I've focused
13 on and what I would anticipate would be the
14 focus of any testimony.

15 BY MR. SNAPP:

16 Q. Okay. I'm just trying to
17 understand if you're going to be providing
18 testimony that any of the defendants caused
19 the opioid crisis or opioid epidemic, and if
20 so, I'm going to ask you questions about what
21 they did, so...

22 A. Of course. Of course.
23 I don't anticipate doing so.

24 Q. Thank you.

25 So I noticed that in your CV --

1 well, strike that.

2 Just to be clear, there's one
3 statement in paragraph 16, and I just want to
4 ask about --

5 MS. RITTER: Excuse me, do you
6 mean Exhibit --

7 MR. SNAPP: Paragraph 16 in
8 Deposition Exhibit 1.

9 MS. RITTER: Okay.

10 MR. SNAPP: I'm sorry. I might
11 be looking at the wrong paragraph.
12 Forgive me.

13 BY MR. SNAPP:

14 Q. Now, in the spillover sentence
15 from page 4 to page 5, you refer to the
16 activities of a number of intermediary
17 organizations supported by manufacturers.

18 Do you see that?

19 A. I do.

20 Q. What organizations are you
21 referring to in that sentence?

22 A. Well, I believe they're cited
23 and discussed in the references that I
24 provide to support that assertion, and I also
25 see in footnote 3 that I provided some

1 further context for that comment.

2 Q. And is it your testimony --
3 well, first of all, let me ask: Have you
4 studied the manufacturer's -- any
5 manufacturer's relationship with third
6 parties, third-party organizations like those
7 you're speaking of in footnote 3 in
8 paragraph 16?

9 A. I have.

10 Q. For this case?

11 A. Not to prepare my report, no.

12 Q. So I just want to make sure I
13 understand, if you're going to be providing
14 testimony with respect to -- assuming you
15 testify -- the activities of intermediary
16 organizations that were supported by
17 manufacturers.

18 What activities are you talking
19 about?

20 MS. RITTER: Objection, asked
21 and answered.

22 THE WITNESS: Can you ask the
23 question again, please?

24 BY MR. SNAPP:

25 Q. In the sentence that we're

1 talking about, you refer to the activities of
2 a number of intermediary organizations
3 supported by manufacturers.

4 A. Right.

5 Q. What specific activities are
6 you referring to?

7 MS. RITTER: Objection, asked
8 and answered.

9 A. You're asking about the
10 activities rather than the organizations
11 themselves?

12 BY MR. SNAPP:

13 Q. Well, the -- yes, I am.

14 A. And you're asking whether or
15 not -- I mean, once again, my report focuses
16 on a national abatement plan.

17 Q. Understood.

18 A. The -- and I reference -- to
19 support this assertion, I reference -- I have
20 a footnote that describes financial support,
21 and I discuss that, and then I also cite
22 studies that I think provide more context to
23 support this assertion.

24 Q. Is it your view, sir, that
25 financial support of these organizations or

1 individuals somehow impacted the veracity,
2 scientific veracity of the work that they
3 were doing?

4 A. I mean, that's not what I was
5 asked to assist the courts with in this case.

6 Q. Okay. So is it fair to say you
7 won't be providing testimony on that issue,
8 if you testify?

9 A. If I testify, I would
10 anticipate testifying about anything that I
11 was asked to testify about. I don't expect
12 at present for my testimony to be focused on
13 this matter.

14 Q. The issue of --

15 A. The issue of --

16 Q. -- the company support --

17 A. -- the relationship between
18 intermediary organizations and manufacturers.

19 Q. All right. Or individuals as
20 well, right? You don't expect to provide
21 testimony about the relationship between any
22 manufacturer and key opinion leaders, for
23 example?

24 A. It's not what I've -- were I to
25 testify, I don't -- you know, were I to

1 testify, I anticipate that my testimony would
2 focus on the substance of my report and the
3 substance of my report is on abatement
4 remedies.

5 Q. In fact, you yourself have
6 received funding from a pharmaceutical
7 company, correct?

8 A. Can you be more specific?

9 Q. You did work for -- well, you
10 received funding from a company called
11 AstraZeneca?

12 A. I did not. I worked on a
13 contract that was awarded to Johns Hopkins,
14 and so that did -- so indirectly I did, but
15 the contractual relationship was between
16 AstraZeneca and Johns Hopkins, not
17 AstraZeneca and me in the instance that I
18 believe you're referring to.

19 Q. Sir, are you familiar with the
20 open payments data that's available from
21 CMS --

22 A. I am.

23 Q. -- Center for Medicaid
24 Services?

25 (Whereupon, Deposition Exhibit

1 Alexander-6, Alexander Open Payments
2 Data Webpage, was marked for
3 identification.)

4 BY MR. SNAPP:

5 Q. I'm handing you a report as
6 Deposition Exhibit 6 from the
7 openpaymentsdata.gov website that reflects
8 that you received a total of \$93,000 from
9 AstraZeneca in 2017. Is this report
10 accurate?

11 It's double-sided, just so
12 we're clear.

13 A. Thank you.

14 I do not believe it is.

15 Q. What's inaccurate about it?

16 A. I believe that these funds
17 represent a part of a contract that was
18 awarded to Johns Hopkins from AstraZeneca,
19 and I would have to -- you know, I'd have to
20 evaluate this further, examine this further.

21 But I did work on a project
22 that was awarded to Johns Hopkins from
23 AstraZeneca, and I was the principal
24 investigator on that project.

25 Q. And were you aware at the time

1 that you were working on it that it was
2 funded by AstraZeneca?

3 A. Yes, I was.

4 Q. And did the fact that it was
5 being funded by AstraZeneca impact, one way
6 or another, the scientific veracity of the
7 work that you did?

8 A. I don't know.

9 Q. Well, do you believe that you
10 did what you could to make sure that the
11 results of whatever research you were doing
12 were more favorable to AstraZeneca than the
13 data presented?

14 A. Can you ask that again, please?

15 Q. I'm just trying to understand:
16 Did the fact that AstraZeneca was funding
17 your research impact the results?

18 A. I don't know.

19 Q. Who would know?

20 A. Well, you know, I'd be in as
21 good a position as anybody.

22 Q. Do you think it's possible that
23 it did?

24 A. I don't believe so.

25 Q. Did you do your best to follow

1 scientific principles throughout the research
2 that you were doing?

3 A. Yes, I did.

4 Q. And you provided unbiased
5 results?

6 A. You know, as a scientist, my
7 goal is to do so, yes.

8 Q. And you did so in the case of
9 the research you were doing for AstraZeneca?

10 A. Can you ask the question again,
11 please?

12 Q. I'm just trying to understand
13 if you followed sound scientific principles
14 when you were doing the work that you did for
15 AstraZeneca through this grant that was
16 provided to your employer.

17 A. I believe so.

18 Q. Thank you.

19 Now, on your CV, there is a
20 mention -- your CV is marked as -- I know I
21 have it here somewhere -- Exhibit 5. And on
22 pages 33 and 34, there is a mention of the
23 grant from AstraZeneca. You see that?

24 It doesn't say anything about
25 the grant being to Johns Hopkins. It says

1 it's to you; is that correct?

2 A. Yes.

3 Q. Now, did you also --

4 A. I'm --

5 Q. Sure.

6 A. I'm sorry. May I say yes, but
7 it was through Johns Hopkins.

8 Q. Okay.

9 A. And this is how all of these --
10 I would have to look carefully, but my guess
11 is that all of these are through Johns
12 Hopkins, but the name that's identified
13 represents the principal investigator.

14 Q. Did you also serve as a
15 consultant to AstraZeneca and participate in
16 a mock advisory committee meeting for a drug
17 called naloxegol at one point? I couldn't
18 find it in your CV.

19 A. I believe I've done one or two
20 mock advisory committees. I don't recall the
21 product or the manufacturer for those.

22 Q. Did you include those on your
23 CV?

24 A. I would have to check.

25 Q. So just one more question on

1 this marketing issue. Okay.

2 So in paragraph 16 of
3 Deposition Exhibit 2 -- I'm sorry, Deposition
4 Exhibit 1 that we were looking at earlier,
5 you mentioned that sales accelerated, fueled
6 in part by aggressive marketing and
7 promotion.

8 Did you conduct any study or do
9 any research to conclude that sales
10 accelerated, fueled in part by aggressive
11 marketing and promotion?

12 MS. RITTER: Objection, form.

13 A. Which paragraph? Can you --
14 BY MR. SNAPP:

15 Q. The bottom. I think you're on
16 the right page. It's the bottom of page 4,
17 the very last two lines of paragraph 16.

18 A. And can you ask the question
19 again, please?

20 Q. Sure.

21 You say in this paragraph that
22 sales accelerated, fueled in part -- and
23 you're talking about opioid sales -- sales
24 accelerated, fueled in part by aggressive
25 marketing and promotion.

1 I'm just trying to understand
2 what methodology you used to conclude that
3 sales accelerated fueled in part by
4 aggressive marketing and promotion.

5 A. And so your question is what
6 methods did I use to conclude that?

7 Q. Yes, sir.

8 A. I believe I provide a citation
9 to a reference 51, which is the Christie
10 Commission report, and I believe that in turn
11 includes a fairly lengthy discussion of that
12 matter.

13 Q. But as we discussed earlier,
14 you haven't done any research yourself to
15 evaluate whether sales accelerated in part --
16 fueled in part by aggressive marketing and
17 promotion; is that correct?

18 A. Yes, that's correct.

19 Q. Okay. And then similarly, if
20 we could flip over to paragraph 25 on page 7.
21 Are you there?

22 A. Uh-huh. Yes.

23 Q. So here, you're talking about,
24 in the middle of the paragraph, you said:
25 Historical precedence suggests that the

1 current crisis can be successfully reversed
2 with a multifaceted approach that addresses
3 the root causes of the epidemic, including
4 misleading marketing and promotion.

5 Did I read that correctly? And
6 then the sentence continues after that.

7 A. Yes.

8 Q. Okay. And did you do any
9 independent analysis yourself to conclude
10 that misleading marketing and promotion was
11 one of the root causes of the current opioid
12 epidemic for purposes of this case?

13 MS. RITTER: Objection, form.

14 A. No, I did not. I mean, if by
15 independent analysis you mean data-intensive
16 analysis, no, I did not.

17 BY MR. SNAPP:

18 Q. And so I'm just trying to
19 understand the methodology that you used to
20 conclude that one of the root causes of the
21 epidemic was misleading marketing and
22 promotion.

23 Can you explain that to me,
24 please?

25 A. I believe here again I'm citing

1 the Christie Commission report which provides
2 what I felt was a reasonable treatment of
3 this matter for the purposes of the
4 preparation of my report, which was focused
5 on identifying evidence-based remedies that
6 could be employed to reverse opioid-related
7 harms.

8 Q. But you haven't looked at --
9 just to be fair, you haven't looked at any of
10 the underlying documents supporting the
11 Christie Commission report that you cited to,
12 have you?

13 A. I have.

14 Q. And have you studied in
15 particular whether the Christie Commission's
16 conclusions with respect to the defendants'
17 marketing and promotion were accurate?

18 A. I don't recall the level of --
19 I don't recall the level of analysis that I
20 did of each of the references that may have
21 been cited in the Christie Commission report,
22 but overall, I felt that this was an
23 authoritative treatment of the matter that
24 would serve the purposes of the reference
25 that I provide.

1 Q. But again, you haven't done any
2 independent analysis yourself to determine
3 whether any particular defendant's marketing
4 and promotion was misleading; is that fair?

5 A. I have not.

6 Q. Okay. I want to move on to a
7 different topic.

8 So do you agree that the high
9 prevalence of chronic pain has been an
10 important driver in the development of the
11 current opioid crisis?

12 A. I do.

13 Q. And do you agree that
14 prescription opioids play a vital role in the
15 treatment of severe acute pain and pain at
16 the end of life?

17 A. I do.

18 Q. Are there situations, Doctor,
19 when a -- in which a prescription for acute
20 pain would be medically necessary?

21 A. Yes.

22 Q. Are there situations in which a
23 prescription for active -- pain related to
24 active cancer treatment would be medically
25 necessary? Just to be clear, I'm talking

1 about a prescription for opioid medicines, so
2 let me rephrase the question, just so we're
3 clear, on the same page.

4 Are there situations when a
5 prescription for an opioid medication would
6 be medically necessary for active cancer
7 treatment?

8 A. Yes, there are.

9 Q. Are there situations in which a
10 prescription opioid would be medically
11 necessary for palliative care?

12 A. Yes, there are.

13 Q. Are there situations in which a
14 prescription for -- when a prescription
15 opioid would be medically necessary if that
16 prescription was less than or equal to a
17 three-day supply of the opioid?

18 A. Yes.

19 Q. Are there situations in which a
20 prescription for a prescription opioid
21 medicine would be medically necessary for
22 less than or equal to seven days of supply?

23 A. Yes.

24 Q. Are there situations in which a
25 prescription opioid would be medically

1 necessary for a time period of less than or
2 equal to a 14-day supply?

3 A. Yes.

4 Q. Are there situations in which a
5 prescription would be medically necessary for
6 a prescription opioid that would amount to
7 therapy lasting three or fewer months?

8 A. Well, that judgment isn't made
9 at the time that a patient is in front of
10 one, so I'm not clear if you're asking it at
11 time zero -- yeah, can you ask the question
12 again, please?

13 Q. Sure.

14 I'm just trying to understand
15 if there are situations in which a
16 prescription for a prescription opioid would
17 be medically necessary where that
18 prescription lasted three months?

19 A. Without any contact with a
20 clinician, just here's a prescription for
21 90 days, call me in 90 days? Is that what
22 you're --

23 Q. I'm just trying to understand
24 if it would be appropriate, medically
25 necessary for a patient to take, in certain

1 circumstances, a prescription opioid
2 analgesic for three months.

3 A. Oh, for as long as three
4 months?

5 Q. Correct.

6 A. Yes.

7 Q. What about six months?

8 A. Yes.

9 Q. What about 12 months?

10 A. Yes.

11 Q. Are there situations when it
12 would be appropriate for a patient to take a
13 prescription opioid with stable dosing as
14 high as 200 morphine equivalents a day, MMEs
15 a day?

16 A. Well, I mean, exceedingly
17 unusual cases, I suppose, plausibly, yes.

18 Q. What about 150 MMEs a day?

19 A. Here again, I was asked to
20 provide estimates regarding abatement, and,
21 you know, with respect to the treatment of
22 chronic pain and the appropriateness of
23 opioids in that context, I certainly think
24 the examples that you've given thus far,
25 there are some patients and some clinical

1 instances where those types of treatments are
2 appropriate.

3 Q. Doctor, I just want to -- I
4 haven't really gone through much of your
5 background at all, so I just want to make
6 clear.

7 You were trained -- is it fair
8 to say you were trained at a highly regarded
9 medical school, Case Western?

10 A. I did go to medical school in
11 Cleveland for four years, yes, at Case
12 Western.

13 Q. And you completed your
14 internship and residency at University of
15 Pennsylvania?

16 A. I did.

17 Q. Do you think you received a
18 high-quality medical education?

19 A. You know, that's a difficult
20 question to answer. I'm pleased with the
21 training that I received.

22 Q. You were taught by
23 well-regarded professors in the field?

24 A. There are, you know, professors
25 of varying quality at every institution and

1 hospital.

2 Q. Did you have any bad professors
3 that you can think of?

4 A. Yes, I did.

5 Q. Anyone who taught you anything
6 that you believe was incorrect with respect
7 to prescribing?

8 A. That was -- I don't recall.

9 Q. Is it fair to say that what you
10 were taught in medical school was reflective
11 of what was known in the scientific and
12 medical community at the time?

13 A. I don't recall, and I don't
14 feel able to judge that question.

15 Q. Fair enough.

16 Let me ask you -- so we talked
17 about a number of issues earlier that we were
18 able to agree on with respect to a number of
19 topics, so I want to ask some similar
20 questions.

21 Do you agree that doctors are
22 trained in medical school how to evaluate
23 risks?

24 A. I think it depends across
25 medical schools and across training settings.

1 Q. Were you trained how to
2 evaluate risks?

3 A. Can you be more specific,
4 please?

5 Q. Well, were you trained how to
6 evaluate risks associated with a medicine
7 that you're prescribing?

8 A. Not -- not extensively.

9 Q. Should you have been?

10 A. Yes. I mean, I don't want to
11 misrepresent how much I was trained about
12 this. It's hard for me to provide what I
13 feel is a reliable scientific appraisal about
14 the full context of my training that occurred
15 25 years ago or so.

16 But -- but my perspective today
17 is that the training that clinicians receive
18 in medical school is -- that there's some
19 room for improvement.

20 Q. Do you agree that a doctor
21 should prescribe prescription medications
22 based on their medical judgment after
23 weighing the risks and benefits of the
24 medication for the particular patient?

25 A. I do.

1 Q. Now, there's a paragraph in
2 your report that I just want to understand,
3 that -- it's paragraph 31 of
4 Deposition Exhibit 1. In the second sentence
5 of that paragraph you say: For example,
6 during the first decade of the epidemic --

7 Just so we're clear, I think we
8 established earlier that was from the
9 late '80s or early '90s was the first decade?

10 A. Well, I said -- I believe I
11 said the genesis of the epidemic.

12 Q. Okay. So what would be the
13 first decade of the epidemic?

14 A. I think in this context, I was
15 referring to what typically in many
16 scientific and public health communications
17 regards the epidemic as having began in the
18 late 1990s. So I think in this context, I'm
19 referring to that period.

20 Q. And you say in your report that
21 some said -- and I'm quoting -- some said
22 that if a patient has organic pain, one need
23 not worry about the addictive potential of
24 opioids.

25 Did I read that correctly?

1 A. Yes.

2 Q. Who said that?

3 A. Are you asking me the name of a
4 specific person?

5 Q. Well, I'm just trying to
6 understand what you meant by some said that
7 if a patient has organic pain, one need not
8 worry about the addictive potential of
9 opioids.

10 Let me ask a more specific
11 question.

12 A. Please.

13 Q. Were you referring in this
14 sentence to someone during your medical
15 school training who said that?

16 A. This -- I believe I'm writing
17 here more about my experience as a resident
18 than as a medical student. That would have
19 been the first time that I would be
20 prescribing independently.

21 Q. And so --

22 A. Or more independently.

23 Q. So the person or persons who
24 said that if a patient has organic pain, one
25 need not worry about the addictive potential

1 of opioids, is that someone that you worked
2 with?

3 A. I don't -- there's not a
4 specific person in mind that I can provide to
5 you to attribute that statement to --

6 Q. Okay. Fair enough.

7 A. -- or that idea, that concept.

8 Q. Is it fair to say then that it
9 wasn't one of the defendants in this case who
10 said that to you?

11 A. No, I don't -- I have -- no, I
12 don't feel -- I mean, I don't -- you know,
13 the paragraph -- in writing this, my effort
14 was to communicate the general teaching and
15 general approach to pain treatment with
16 opioids that I recall from my residency
17 training period.

18 Q. Fair enough.

19 So during that residency time
20 period, the residency training period, and
21 since then, have you reviewed -- if I asked
22 you this already, please excuse me -- have
23 you reviewed any particular defendant's
24 labeling for their prescription medications?

25 A. Can you ask the question again,

1 please?

2 Q. Sure.

3 Have you reviewed the labeling
4 or prescribing information for any
5 defendant's opioid medications?

6 A. Yes, I have.

7 Q. And is the statement that a
8 patient -- if a patient has organic pain, one
9 need not worry about the addictive potential
10 of opioids, consistent with the labeling that
11 you've reviewed?

12 A. I don't recall the precise
13 wording of the labeling, if that's what
14 you're asking.

15 Q. I'm just asking if the
16 statement that you included here in
17 paragraph 31 is consistent with the labeling.
18 Is it fair to say you don't know?

19 A. Well, I don't -- I mean, I
20 don't think -- this isn't a statement that I
21 would expect to see on a drug label, if
22 that's what you're asking. Yeah, it's not
23 something I would expect to see on a drug
24 label.

25 Q. But if you were weighing the

1 risks and benefits and the addictive
2 potential of a particular opioid medication,
3 would you rely on the information in the drug
4 label or the information that some unknown
5 person said that if a patient has organic
6 pain, one need not worry about the addictive
7 potential of opioids?

8 A. Well, I mean, I think -- as
9 I've said before, I think clinicians are
10 trying, in general, to do the right thing,
11 and they are working within the systems
12 that -- in which they exist and practice, and
13 their practice patterns are shaped by the
14 information that they receive in many
15 different ways, shapes and form that
16 originate from manufacturers.

17 So -- so that is -- you know,
18 so that's my answer.

19 Q. In your practice,
20 Dr. Alexander, have you seen sales reps from
21 pharmaceutical manufacturers?

22 A. Exceedingly and infrequently --
23 I mean exceedingly infrequently.

24 Q. Do you recall any visit by a
25 sales rep in which a sales rep discussed with

1 you opioid medications?

2 A. I don't think I've had a
3 visit -- I mean, I'm answering cautiously and
4 being forthright, but I don't recall. I
5 think that my interactions with sales reps
6 have only been through infrequent inpatient
7 interactions, not through interactions in
8 ambulatory practice.

9 I mean, I -- you know, my best
10 guess is I've interacted with -- yeah, so
11 I -- if you could ask the question again,
12 please.

13 Q. You were just about to say, I
14 think, your best guess is that you've
15 interacted with a certain number of sales
16 reps. How many sales reps do you think that
17 you've interacted with?

18 A. Very few.

19 Q. A dozen? Less than a dozen?

20 MS. RITTER: Objection, form,
21 asked and answered.

22 A. Perhaps less than a dozen.

23 BY MR. SNAPP:

24 Q. Do you know which companies
25 they were from?

1 A. I do not.

2 Q. Is it fair to say, Doctor, that
3 you're not offering any opinions in this case
4 on the accuracy of the labeling or
5 prescription information for any particular
6 prescription medicine?

7 A. I've not been asked in
8 preparing my report to focus on that matter.

9 Q. Now, in the same paragraph we
10 were just looking at, paragraph 31, there's a
11 sentence, a long sentence at the end, the
12 last five lines in the paragraph that says:
13 This approach led me and my fellow physicians
14 to prescribe opioids more liberally than we
15 might have otherwise for patients who had a
16 clear source of the pain.

17 First of all, did I read that
18 correctly?

19 A. Yes.

20 Q. And have you, in fact,
21 prescribed opioids in your practice?

22 A. Yes.

23 Q. How recently?

24 A. I don't recall.

25 Q. In 2019?

1 A. I don't recall.

2 Q. 2018?

3 A. I would guess, yes, in 2018.

4 Q. Okay. And how often in your
5 practice currently do you prescribe opioid
6 medications?

7 A. Infrequently.

8 Q. For what -- in what
9 circumstances do you prescribe them? Just to
10 be clear, I'm not asking for any patient
11 information. I just want to understand the
12 type of patient that you might prescribe an
13 opioid for.

14 A. Patients with acute pain or
15 acute exacerbations of chronic pain that have
16 failed what I believe are safer and more
17 effective alternatives.

18 Q. Which opioid medications have
19 you prescribed?

20 A. I don't recall.

21 Q. Have you prescribed OxyContin?

22 A. My guess is I have, but
23 exceedingly infrequently.

24 Q. Have you prescribed Hysingla or
25 Butrans?

1 A. I do not believe so.

2 Q. Do you have a ballpark estimate
3 the last time you prescribed OxyContin?

4 A. Well, I think in 2009 or 2010 I
5 prescribed some -- perhaps 2009 or 2010.

6 Q. By the way, just going back to
7 the sales rep point, my question is about
8 sales reps: Did anything that you were told
9 by a sales rep at any point impact your
10 prescribing decisions with respect to opioid
11 medications?

12 A. I don't know.

13 Q. Sitting here today, you don't
14 know one way or another?

15 A. Correct.

16 Q. Is there anything -- do you
17 expect to remember anything in the future as
18 to what a particular sales rep might have
19 told you that would impact -- that impacted
20 your sales -- your prescribing information --
21 I'm sorry, your prescribing decision?

22 A. Your question is whether I
23 anticipate in the future --

24 Q. Well, I'm just trying to
25 understand --

1 A. -- being able to remember
2 something that I don't remember now.

3 Q. I'm just trying to -- I'm sorry
4 for talking over you.

5 A. Yeah.

6 Q. I just want to understand: Is
7 it fair to say, sir, that you don't recall
8 any specific statement by any sales rep that
9 impacted your prescribing decisions with
10 respect to a prescription opioid medication?

11 MS. RITTER: Objection, form,
12 asked and answered.

13 A. I do not.

14 BY MR. SNAPP:

15 Q. Have you ever written a
16 prescription for an opioid analgesic that was
17 medically unnecessary?

18 A. I believe so.

19 Q. In what context?

20 A. For example, prescribing -- I
21 mean, let me ask a clarifying question,
22 please.

23 Are you asking whether at the
24 time I believed that it was medically
25 unnecessary or now, knowing if I knew now

1 what I knew then, I believe it would be
2 medically unnecessary?

3 Q. Well, let's start with the
4 first question, and then you can answer the
5 second question.

6 A. I've prescribed -- I mean, I
7 can recall a patient where I had some
8 misgivings about prescribing an opioid, yes.

9 Q. And did you ultimately regret
10 prescribing that opioid to that particular
11 patient?

12 A. Once again, I think I did the
13 best thing that I could have done at the time
14 with the information that I had.

15 Q. And what were your misgivings
16 based on?

17 A. Whether there were safer and
18 more effective alternatives for the patient
19 for that instance.

20 Q. Were you concerned about the
21 potential for abuse with this particular
22 patient?

23 A. No.

24 Q. Do you -- have you ever seen
25 any of your colleagues, other medical

1 providers, write an opioid prescription that
2 you believed was medically unnecessary?

3 A. Yes.

4 Q. In what context?

5 A. Well, you know, here again,
6 this was not the focus of my report, but I do
7 touch upon the vast oversupply of opioids,
8 and one of the many ways that that's taken
9 place is through the quantities dispensed,
10 and I think that opioids have been dispensed
11 in quantities far beyond what's necessary for
12 many common conditions.

13 Q. Do you believe that you ever
14 dispensed or prescribed opioid medications
15 far beyond what's necessary for many common
16 conditions?

17 A. In residency, I believe I may
18 have, yes.

19 Q. Were you making your decision
20 with respect to prescribing those opioids
21 based on your best medical judgment after
22 weighing the risks and benefits of the
23 particular medication for the particular
24 patient?

25 A. I mean, it's very hard for me

1 to, you know, make what I feel is a solid
2 scientific judgment and appraisal of my
3 prescribing decisions in residency.

4 Q. By the way, did you receive --
5 going back to the issue of Pharmaceutical
6 company funding, did you receive a consultant
7 fee from a company called Otsuka America
8 Pharmaceutical?

9 A. I believe I did.

10 Q. And what was that for?

11 A. It -- I believe it was for a
12 one-time two- to four-hour meeting that took
13 place in Baltimore.

14 Q. What was the meeting about, to
15 the extent you're able to talk about it?

16 A. I -- my guess is I've signed a
17 nondisclosure agreement regarding that
18 matter.

19 Q. Okay. I want to turn to your
20 model and the methodology that you used with
21 respect to the abatement plan.

22 First of all, can you tell me,
23 what is the goal of the abatement plan
24 included in your reports?

25 A. My goal was to identify -- to

1 identify methods that have evidence behind
2 them that can be implemented, and to reduce
3 opioid-related injuries and addiction and
4 death.

5 Q. Is the goal to completely
6 eliminate opioid-related injuries and
7 addiction and death?

8 A. Well, you know, I -- no, it is
9 not.

10 Q. So you said it's to reduce
11 opioid-related injuries and addiction and
12 death. How much are you seeking to reduce?

13 A. A lot. I mean we have an
14 enormous way to go, so -- and I think, you
15 know, there's an enormous need in Summit and
16 Cuyahoga Counties, and, you know, it's clear
17 that there's an epidemic in those counties.
18 And so there's an enormous way to go.

19 Q. You used something called the
20 Markov model in your work in this case; is
21 that correct?

22 A. Yes, it is.

23 Q. Can you describe for me, what
24 is the Markov model?

25 A. A Markov model is a

1 mathematical model that allows for one to
2 examine dynamic processes within a
3 population.

4 Q. Now, I've looked at a lot of
5 the papers that you've written, and I didn't
6 see any that included the Markov model. Have
7 you -- correct me if I'm wrong. Have you
8 ever published with respect to the Markov
9 model?

10 MS. RITTER: Objection, form.

11 MR. SNAPP: Let me ask a
12 clearer question.

13 THE WITNESS: Please.

14 BY MR. SNAPP:

15 Q. Sure. I'm just trying to
16 understand. Have you used the Markov model
17 in academic research before your
18 participation in this case?

19 MS. RITTER: Objection, form.

20 A. I believe -- can you ask one
21 more time, please?

22 BY MR. SNAPP:

23 Q. Sure.

24 I'm just trying to understand
25 if you've used the Markov model in a

1 non-litigation context --

2 MS. RITTER: Did you say a --

3 BY MR. SNAPP:

4 Q. -- prior to this?

5 MS. RITTER: -- a Markov model?

6 Is that what you said? I couldn't
7 hear you. I'm sorry.

8 MR. SNAPP: I might have said
9 the Markov, but we can use a Markov
10 model.

11 BY MR. SNAPP:

12 Q. Have you used a Markov model
13 prior to your work in this case?

14 A. I have not.

15 Q. Do you know if the Markov model
16 that you used in this case has been subject
17 to any peer review?

18 A. It has, but -- it has.

19 Q. In what context?

20 A. It's based on the inputs of a
21 number of renowned modeling experts.

22 Q. Who are those experts?

23 A. Harold Pollack, P-O-L-L-A-C-K,
24 David Dowdy, D-O-W-Y [sic], are the main two,
25 but it also reflects the contributions of

1 Jeromie Ballreich, J-E-R-O-M-I-E,
2 B-A-L-L-R-E-I-C-H.

3 Q. And did you consult with
4 Mr. Pollack and Mr. Dowdy and Mr. Ballreich
5 in preparing your report in this case?

6 A. Regarding the component of the
7 report that's focused on the Markov model, I
8 did.

9 Q. You did?

10 A. I did.

11 Q. Okay. And where are these
12 three -- is -- Mr. Ballreich is one of your
13 employees, right?

14 A. He's a consultant, yes.

15 Q. As is Mr. Dowdy and
16 Mr. Pollack, correct?

17 A. Yes.

18 Q. They're on the list of people
19 you told me before were paid by your company;
20 is that correct?

21 A. Yes. Yes.

22 Q. And so when I asked you if it
23 has been subject to any peer-review process,
24 let me ask it sightly differently.

25 Has the Markov model that you

1 used in this case been subject to any peer
2 review through the publication process?

3 A. It has not.

4 Q. Do you consider this an
5 economic model?

6 A. Well, it's useful for both
7 epidemiology and economics.

8 Q. Have you ever used it -- I
9 think you said you -- well, strike that.

10 What training have you received
11 yourself on using a Markov model?

12 A. I have -- can you ask again,
13 please?

14 Q. Sure.

15 I'm just trying to understand
16 what training you've received with respect to
17 using a Markov model.

18 A. Right. My learning about this
19 methodology has occurred through working with
20 the people that I identified as well as
21 working previously with health economists,
22 primarily at the University of Chicago during
23 my training there, and during my subsequent
24 faculty life there.

25 Q. And so that was in the early

1 2000s?

2 A. Yes.

3 Q. And since then, have you used a
4 Markov model in any context for any analysis
5 that you have performed?

6 A. I have not.

7 Q. How did you choose the Markov
8 model for this case? How did you choose to
9 use a Markov model as opposed to some other
10 model?

11 A. It's a useful tool in this
12 instance because of its ability to allow for
13 one to follow populations over time and
14 through different transition states. And I
15 think this is the reason that two or three
16 prior models of the opioid epidemic that have
17 been published have also used Markov models
18 and upon which our model was based.

19 Q. And are you referring to the
20 Chen and Pitt articles that you cited in your
21 report?

22 A. Among others, yes.

23 Q. Do you consider yourself an
24 expert in the application of a Markov model?

25 A. I think in this instance I

1 consider myself an expert in helping to
2 advise the courts regarding the remedies that
3 should be instituted in any abatement plan as
4 well as understanding the costs of those
5 remedies. And as part of that, I believe the
6 Markov model provides value.

7 Q. Did you consider using anything
8 other than a Markov model to estimate
9 abatement costs in this case?

10 A. Yes.

11 Q. What other models did you
12 consider?

13 A. So we considered just a flat
14 spreadsheet, you know, just a flat Excel
15 file, rows and columns. We considered a
16 decision tree, we considered a systems
17 dynamics model, and we considered a Markov
18 model.

19 Q. And why did you choose a Markov
20 model over the three other methodologies you
21 just mentioned? Why did you decide on a
22 Markov model as opposed to a flat
23 spreadsheet, a decision tree or a systems
24 dynamics model?

25 A. We felt it would give us the

1 best answers to the questions that we posed.

2 Q. Are there any limitations to
3 the Markov model that you used?

4 A. Yes.

5 Q. What are those limitations?

6 A. One limitation is that it's
7 dependent upon assumptions about the
8 populations and transitions -- the
9 populations within different compartments of
10 the model, if you will, and the transitions
11 that individual -- the probabilities of
12 transitioning from one compartment to
13 another.

14 Q. Okay. There are also
15 assumptions with respect to certain costs
16 that you've used as well, right?

17 A. Yes.

18 Q. So there are assumptions
19 related to the populations, the transitions
20 and the costs.

21 Any other assumptions that you
22 can think of? I should say any other
23 categories of assumptions?

24 A. Assumptions or limitations?

25 Q. Well, you identified the fact

1 that it's dependent -- that the model is
2 dependent on assumptions --

3 A. Right.

4 Q. -- as a limitation of the
5 model.

6 A. Right.

7 Q. And I'm asking if there are
8 other assumptions other than population,
9 transition and costs.

10 A. I mean, those are the big ones.

11 Q. Okay. So other than the fact
12 that the model is dependent on assumptions,
13 are there other limitations to your model?

14 A. Well, the epidemic is dynamic,
15 and so I think that the answer is no -- I
16 mean, I think that assumptions are the major
17 matter here. The epidemic is dynamic and
18 will continue to change and evolve, and so --
19 so what we've done and what I've tried to do
20 in my report is to provide a framework for
21 the courts and parties to use going forward.

22 Q. Okay.

23 (Whereupon, Deposition Exhibit
24 Alexander-7, 2018 Pitt et al
25 Publication, was marked for

1 identification.)

2 BY MR. SNAPP:

3 Q. I'm handing you, Doctor, what's
4 been marked as Deposition Exhibit 7. Do you
5 recognize this as the Pitt article that you
6 cited in your report?

7 A. I do.

8 Q. And the Pitt article, if you
9 turn to -- I'm sorry, give me one moment,
10 please.

11 The Pitt article lists a number
12 of limitations on page 1399.

13 A. Uh-huh.

14 Q. You see those?

15 A. Yes.

16 Q. So the first one is: The
17 drivers behind the opioid epidemic are
18 dynamic, nonlinear and uncertain.

19 Do you agree with that as a
20 limitation to your model as well?

21 A. I do.

22 Q. And the authors here go on to
23 say: Although we tested the impact of each
24 policy on multiple potential models of the
25 current state, the epidemic continues to

1 change and may be substantially different in
2 just five years. For example, the increasing
3 prevalence of fentanyl makes heroin use more
4 deadly.

5 Did I read that correctly? As
6 a --

7 A. Yes.

8 Q. And do you agree that the
9 same -- that limitation that the authors of
10 the Pitt article identified is also a
11 limitation of your use of the Markov model?

12 A. It is. And -- it is, and that
13 falls under the category of the assumptions
14 that are made regarding the populations and
15 the transition probabilities. But, yes, I do
16 certainly agree with that.

17 Q. The second limitation that the
18 authors of the Pitt article identify was, the
19 next paragraph says: Substance use disorder
20 is a complex disease with varying degrees of
21 severity and high relapse and recurrence
22 rates. Our model is a simplification of the
23 phenomenon intended to capture only enough
24 detail to inform key high-level policy
25 questions.

1 Does that paragraph that I just
2 read also apply as a limitation to your use
3 of the Markov model in this case?

4 A. Well, our model, we believe --
5 I believe improves upon prior models in
6 several ways. So, for example, we allow for
7 many different subgroups of patients with
8 opioid use disorder that take into account
9 the varied complexity that Pitt is referring
10 to.

11 We account for the large
12 population of individuals that have prior
13 opioid use disorder, but not past-year opioid
14 use disorder, and there's several other
15 differences as well between our model and the
16 Pitt model that we believe address this
17 concern.

18 But nevertheless, I would still
19 agree, substance use disorder is a complex
20 disease and with varying degrees of severity
21 and high relapse and recurrence rates. And
22 our model nevertheless still represents a
23 simplification. I believe it is -- improves
24 upon the Pitt one in several ways, but it is
25 a simplification, yes.

1 Q. And then if we skip down to the
2 final limitation that's articulated in the
3 Pitt article, the authors say: Though we
4 model the U.S. population on average to gain
5 high-level policy insights, different
6 geographical regions, age groups, races and
7 genders will experience different severities
8 and drivers of opioid-related problems.

9 As an initial matter, do you
10 agree with that statement?

11 A. Yes, I do.

12 Q. And do you agree that that is a
13 limitation of your model?

14 A. I think for the purposes that
15 we designed our model, I'm not sure that this
16 is inherent limitation. Our effort wasn't to
17 provide inputs to provide specific estimates
18 for Cuyahoga and Summit Counties, although
19 our model could potentially be used for that
20 purpose.

21 But it's certainly the case
22 that there's geographic variation in the ways
23 that the epidemic has manifest, if that's
24 what you're asking.

25 Q. Well, I'm just trying to

1 understand if your model has the same
2 limitation that this model does in terms of
3 if you wanted to localize your national
4 estimates to a particular geographic
5 location, you'd have to deal with these
6 limitations identified in this paragraph that
7 I just read from the Pitt article; is that
8 fair?

9 A. One would have to consider
10 those matters, yes.

11 Q. And that's not something that
12 you've done in your work for this case with
13 respect to Cuyahoga and Summit Counties,
14 correct?

15 A. No, that's not fully correct.

16 Q. How is that incorrect?

17 A. We -- I have attempted to use
18 limited data from the counties that was
19 available to try to -- I've considered and
20 looked at some limited county data to see
21 whether, you know, in an effort to consider
22 applying the model locally, but I did not
23 pursue that exercise.

24 Q. Okay. So just so we're clear,
25 you have not applied your model locally based

1 on the criteria that we just read from the
2 Pitt article or any other criteria. Fair
3 enough?

4 MS. RITTER: Objection, form,
5 compound.

6 THE WITNESS: Can you ask that
7 again, please?

8 MR. SNAPP: Let me just be very
9 simple.

10 BY MR. SNAPP:

11 Q. You have not attempted to apply
12 your model locally in Cuyahoga and Summit
13 Counties, correct?

14 A. No, that's correct. And in my
15 report I speak to -- I speak to this matter
16 in the way that I believe that our national
17 estimates can be useful, and as well as the
18 limits of their utility for developing
19 precise estimates for the Cuyahoga and Summit
20 County.

21 Q. Fair enough.

22 So, sir, you refer in your
23 report to something called the APOLLO model.
24 What is the APOLLO model?

25 A. The APOLLO model refers to the

1 Markov model that we used to estimate changes
2 in populations affected by the opioid
3 epidemic over time.

4 Q. And APOLLO is in all caps. Is
5 it an acronym for something?

6 A. It is not an acronym.

7 Q. So is this a model -- the
8 APOLLO model, is this something that your
9 company, Monument Analytics, came up with?

10 A. Yes, it is.

11 Q. So it's not a model that's
12 published anywhere; is that fair?

13 A. Yes, that's true.

14 Q. In terms of -- is the APOLLO
15 model -- I just want to make sure I'm using
16 the right terminology for the rest of the
17 day.

18 A. Of course, of course.

19 Q. Is the APOLLO model the same as
20 the Markov model for purposes of your report?

21 A. Yes, it is.

22 Q. So the APOLLO model is your
23 application of the Markov model to this case;
24 is that fair?

25 A. Yes, it is.

1 Q. Okay. Thank you for clarifying
2 that. Okay.

3 So why don't we take a short
4 break before I move any deeper into the
5 model.

6 MS. RITTER: Good idea.
7 Everybody get some coffee.

8 THE VIDEOGRAPHER: Going off
9 the record, 11:31 a.m.

10 (Recess taken, 11:31 a.m. to
11 11:43 a.m.)

12 THE VIDEOGRAPHER: We're back
13 on the record at 11:43 a.m.

14 BY MR. SNAPP:

15 Q. So, Doctor, we were talking
16 about the APOLLO model, the APOLLO Markov
17 model that you used in this case, and I want
18 to ask you some questions in particular about
19 how you determined the sequencing in the
20 APOLLO model.

21 MR. SNAPP: David, could I get
22 my computer screen, please.

23 BY MR. SNAPP:

24 Q. So I've put on the screen one
25 of the pages from one of your supporting

1 spreadsheets. Do you recognize this
2 document?

3 A. I do.

4 Q. It's very difficult to print it
5 out because of the format, so I thought it
6 would be easier just to show it on the
7 screen.

8 MR. SNAPP: And we'll mark a
9 thumb drive with these on so that
10 we'll all be on the same page in terms
11 of what's in the record, okay? Is
12 that okay with you?

13 MS. RITTER: Okay.

14 BY MR. SNAPP:

15 Q. So I want to understand the
16 sequencing. So your model assumes that from
17 the general population, which is shown in the
18 top left box number 1 or bubble number 1,
19 people can only transition directly into
20 medical use of opioids or to heroin use,
21 correct?

22 A. Yes.

23 Q. In other words, a person cannot
24 transition directly from the general
25 population to nonmedical use of opioids under

1 your model.

2 Am I correct about that?

3 A. Yes.

4 Q. What's your basis for not
5 including a transition directly from the
6 general population to the nonmedical use of
7 opioids?

8 A. Can you go to the Inputs tab,
9 please?

10 Q. Certainly. What do you need --
11 before we go there, what do you need to look
12 at to answer my question?

13 A. Yeah. So I'm interested in
14 reviewing the inputs that go -- that lead
15 from Box 1, the transition probabilities from
16 Box 1.

17 Q. Okay.

18 A. So I just would like to confirm
19 the transitions that are depicted.

20 Q. And just so we're clear, just
21 so the record is clear, what I'm talking
22 about is that you can go from the general
23 population down to -- which is Box 1, down to
24 Box 3H, or you can go from the general
25 population to Box 2, which is the medical use

1 of opioids.

2 But under your model, you can't
3 go from the general population, Box 1, down
4 to Box 3, which is the nonmedical use of
5 opioids. Correct?

6 A. Yes.

7 Q. Okay. And you'd like to look
8 at the inputs, which I've put on the screen
9 now.

10 A. Correct. So if you scroll down
11 further, please.

12 Q. Yes, sir.

13 A. And further still. Okay.

14 MS. RITTER: Can we make it
15 clear for the record which table --
16 it's going to be hard for people --

17 MR. SNAPP: Yes, we're looking
18 at the table that's -- the filename is
19 MAT Model 2.0 version 51.xlsm.

20 My understanding is that this
21 table, including the filename at the
22 very top, will be reflected on the
23 video record.

24 A. So thank you for this. That
25 was helpful.

1 So in some cases we may not
2 have had a transition -- so I think -- so you
3 had asked why there's not a direct transition
4 from general population to nonmedical use.

5 BY MR. SNAPP:

6 Q. Correct.

7 A. And the model represents a
8 schematic or a simplification of all of
9 the -- necessarily represents a
10 simplification of all of the potential
11 transitions and populations, just as we
12 discussed a few minutes ago with the Pitt's
13 approach. And it may also have been that we
14 didn't feel that we had as reliable inputs to
15 provide a transition probability for this
16 number.

17 Q. Okay. Well, I'd like you to
18 keep this -- we're going to keep this on the
19 screen, but I'd like you to take a look at
20 Deposition Exhibit 1, which is your report.
21 It's right on the top there. It's your
22 April 3rd report. And I'd like you to flip
23 to page 25, paragraph 73, please.

24 I'm directing you in
25 particular -- feel free to read the whole

1 thing, if you'd like, but I'm particularly
2 interested in the last sentence of that
3 paragraph 73 of your report.

4 And just for the record, it
5 reads: For example, of the 11.4 million
6 individuals in the United States reporting
7 opioid misuse in 2017, more than four-fifths,
8 83%, reported that they bought, were given,
9 or stole opioids from individuals who were in
10 turn prescribed these drugs by a licensed
11 prescriber.

12 Did I read that correctly?

13 A. Yes.

14 Q. And so my question is: Your
15 model does not account for that 83% of people
16 in 2017 who reported opioid misuse and
17 bought, were given, or stole opioids from
18 individuals who were, in turn, prescribed
19 those drugs by a licensed prescriber,
20 correct?

21 A. I do not believe that's
22 correct.

23 Q. Well, some of these 83% would
24 have gone directly from the general
25 population, which is Box 1 on the chart,

1 directly to Box 3, nonmedical use of opioids,
2 by either being given, buying or stealing
3 opioids from individuals who were, in turn,
4 prescribed the drugs by a licensed
5 prescriber, correct?

6 A. There -- each box has a
7 population associated with it. So if you go
8 to the Inputs tab again, Tab 3.

9 Q. Okay. Can you answer my
10 question first?

11 A. Can you please ask the question
12 again?

13 MR. SNAPP: Mr. Court Reporter,
14 could you please read the question
15 back.

16 (The following portion of the
17 record was read.)

18 "QUESTION: Well, some of these
19 83% would have gone directly from the
20 general population, which is Box 1 on
21 the chart, directly to Box 3,
22 nonmedical use of opioids, by either
23 being given, buying or stealing
24 opioids from individuals who were, in
25 turn, prescribed the drugs by a

1 licensed prescriber, correct?"

2 (End of readback.)

3 A. It's hard for me to
4 understand -- I mean, it's hard for me to
5 understand the question. I mean, I agree
6 with this question in the report -- or this
7 statement in the report, and I can explain
8 the way that we addressed the significant
9 population of people that use opioids
10 nonmedically.

11 But we do not have a direct
12 transition probability over time from the
13 general population to nonmedical use of
14 opioids.

15 We do consider the significant
16 number of people that use opioids
17 nonmedically and our model does allow for
18 these individuals to use opioids nonmedically
19 without having received a prescription first.

20 So I think if, you know -- but
21 as to the -- you know, as to the specific
22 reason for the absence of a transition
23 probability from Box 1 to Box 3, I would want
24 to spend more time looking at the model and
25 consulting with the others that developed it

1 with me.

2 BY MR. SNAPP:

3 Q. But just to be clear, this
4 concept page that we're looking on -- at
5 right now is intended to show the different
6 transitions that are accounted for in your
7 model, correct?

8 A. Yes.

9 Q. The transitions from one
10 population to another population?

11 A. Yes. Although there are some
12 transitions that are not depicted in this
13 schematic.

14 Q. When we looked at the inputs,
15 Tab 3, there was no transition probability
16 for going from the general population to the
17 nonmedical use of opioids, correct? If we go
18 down to the -- maybe I went past it.

19 A. If you go up here -- so can you
20 go up further, please? And up further still,
21 please. Up further still, please.

22 So Box 3 has 5 million
23 individuals in it in --

24 Q. That is misuse of opioid
25 population that I've highlighted?

1 A. Correct, the box that we were
2 looking at has 5 million individuals in it at
3 the start of the model.

4 Q. Understood. But you do not
5 take into account anywhere here a transition
6 from the general population to nonmedical use
7 of opioids, correct?

8 A. I think that the model allows
9 for a growth in this population over time,
10 but it is a pathway that's mediated through
11 prescription opioid use, yes.

12 Q. So in other words, in your
13 model, the only way someone gets to
14 nonmedical use of opioids is to first get a
15 prescription for prescription opioids,
16 correct?

17 A. No. At the start of the model,
18 the model runs through 10 or 15 years, and at
19 the starting population of the model, there's
20 5 million individuals that have nonmedical
21 use.

22 Q. Fair enough. Let me rephrase
23 my question.

24 So your model does not permit
25 any additional population -- additions to the

1 population of those who have nonmedical use
2 of opioids, unless they first get a
3 prescription. Fair enough?

4 A. Yes, I believe that's -- that's
5 the case.

6 Q. And does that fact impact the
7 ability of your model to predict what really
8 happens in the real world based on the fact
9 that there are 83%, according to your report,
10 who reported that they bought, were given or
11 stole opioids from individuals, who were, in
12 turn, prescribed these drugs by a licensed
13 prescriber?

14 A. I'm not sure that it does.

15 Q. It could though, right?

16 A. Theoretically, it could, yes.

17 Q. Because if you don't account
18 for those people, your numbers are not going
19 to be reliable.

20 A. I'm sorry, say that again,
21 please.

22 Q. If you don't account for the
23 people who went from the general population
24 at the beginning of your model, they were in
25 that general population number, which you

1 have as over 240 million people, if they then
2 buy, are given or steal opioids from
3 individuals who were in turn prescribed these
4 drugs by a licensed prescriber, they will not
5 be reflected accurately in your model,
6 correct?

7 A. Well, once again, my guess
8 would be that either -- there are dozens or a
9 hundred or more different inputs and
10 populations in the model.

11 Q. Correct. We'll be looking at
12 some of those.

13 A. And we assess its performance
14 relative to other models as well as to data
15 that we have in hand. We calibrate the
16 model, and it both is calibrated -- you know,
17 it's both calibrated to data that exists and
18 we also assess its performance relative to
19 others.

20 But the model represents a
21 simplification, and so the absence of a
22 specific transition probability from Box 1 to
23 Box 3 I believe represents either a decision
24 regarding a simplification or a data point
25 that wasn't readily available to us, so we

1 didn't feel that we were confident about that
2 number.

3 MR. SNAPP: Turn my computer
4 off, please. Thank you.

5 BY MR. SNAPP:

6 Q. Dr. Alexander, you mentioned in
7 paragraph 12 of your report which you have in
8 front of you Hill criteria. Did you actually
9 use Hill criteria anywhere in your analysis?

10 They're often referred to as
11 Bradford Hill criteria, correct?

12 A. Yes.

13 Q. Did you use the Bradford Hill
14 or Hill criteria anywhere in your report?

15 A. Yes.

16 Q. In what way?

17 A. As I note in paragraph 12,
18 these are qualitative criteria that one can
19 apply in order to assess the strength of
20 causal inference that's possible from a given
21 scientific study.

22 Q. I understand that's what it
23 says in your report. I'm trying to
24 understand how you applied that sentence
25 anywhere else in your analysis, because I

1 didn't see it mentioned elsewhere in your
2 report. So I'm just trying to understand it.

3 A. Yeah. So these are the types
4 of criteria that one -- that we're trained to
5 always use, as we're examining evidence in
6 order to try to draw the most scientifically
7 sound conclusions possible.

8 Q. So how did you apply them in
9 this case? That's my question.

10 A. Well, implicitly, I apply them
11 as I'm evaluating scientific studies. So,
12 for example, if I'm examining a study that
13 looks at the evidence to support an
14 intervention to increase access to treatment
15 for opioid addiction, I would consider these
16 types of criterias in evaluating whether or
17 not I believe that study is appropriately
18 framed and interpreted.

19 So, for example -- well, let me
20 stop there.

21 Q. Well, no, go ahead. Do you
22 have an example?

23 A. You know, a cross-sectional
24 study that's done at one point in time
25 doesn't provide temporality, which is one of

1 the criteria. So if someone made very strong
2 claims about a cross-sectional study, very
3 strong causal claims about a cross-sectional
4 study that seemed implausible, for example,
5 and that had weak association -- so I've just
6 provided three of the criteria and the ways
7 that they would qualitatively affect my
8 conclusions about what I can and can't take
9 from that study.

10 Q. Fair enough, sir.

11 In terms of your use of the
12 Hill criteria in this particular case, is it
13 fair to say that you evaluated the studies
14 that you've cited based on your analysis
15 using the Hill criteria?

16 A. In general, this -- these are
17 the types of criteria that I carry with me
18 and use in all of my scientific affairs.

19 Q. Okay. But you didn't do any
20 specific analysis in this case of any
21 particular causal connection between one
22 thing and -- for example, you didn't do any
23 analysis of any causal connection between the
24 defendants' conduct and any particular harm;
25 is that correct?

1 MS. RITTER: Objection. Object
2 to the form.

3 A. Well, I think I felt that we
4 discussed that before. My report was not
5 focused on examining, you know, discoverable
6 materials from defendants and trying to
7 conclude something about how their actions
8 led to the epidemic.

9 BY MR. SNAPP:

10 Q. Fair enough.

11 I just want to talk about a few
12 portions of your report. So page -- I'm
13 sorry, paragraph 126.

14 Do you agree with your
15 statement here that the opioid epidemic is a
16 complex phenomenon with many different
17 dimensions and impacts, and it continues to
18 change and evolve rapidly at national, state
19 and local levels?

20 A. Yes. I mean, I suppose I could
21 have further qualified that it's evolving
22 more rapidly in some than others, but, yes, I
23 agree with the general statement.

24 Q. And in paragraph 175 -- and
25 it's on page 54.

1 A. Uh-huh.

2 Q. You note that the exact -- in
3 the second sentence, the exact costs of
4 abatement are difficult to estimate.

5 Do you agree with that?

6 A. Yes.

7 Q. And you agree that those exact
8 costs of abatement will depend upon the
9 population requiring services and the
10 programs in existence in each jurisdiction?

11 A. Yes. If you're asking about
12 jurisdiction-level costs, yes, those costs I
13 believe will depend upon the specifics of
14 individual jurisdictions.

15 Q. Including the populations
16 requiring services and the existing programs,
17 correct?

18 A. Yes.

19 Q. Okay. And in paragraph 176,
20 you described your analysis as a preliminary
21 analysis of the national costs of 15 types of
22 remedies, correct?

23 A. Yes.

24 Q. And if we look at Deposition
25 Exhibit 3, which is the April 17th update to

1 your supplemental expert report, do the
2 estimates -- if you turn to the third page --
3 there it is -- the table also refers to your
4 estimates as preliminary estimates, correct?

5 A. Yes.

6 Q. Can you explain what you meant
7 in this context by preliminary estimates?

8 A. I meant that, you know, as I
9 state, my goal wasn't to identify the precise
10 costs in a given category, but to provide an
11 initial estimate and initial framework upon
12 which more precise estimates could be
13 derived. So by preliminary, I meant a
14 reasonable starting point.

15 Q. And then as you explained in
16 your report, in paragraph 180, detailed
17 assessments of the specific costs in Cuyahoga
18 and Summit Counties will be required, and
19 there are a number of limitations in
20 extrapolating from national estimates to
21 specific localities.

22 That's what you said in your
23 report, correct?

24 A. Yes.

25 Q. And you have not conducted any

1 detailed assessments of the specific costs
2 within Cuyahoga and Summit Counties that will
3 be required in this case -- strike that.

4 Is it fair to say, sir, that
5 you have not conducted any detailed
6 assessments of the specific costs within
7 Cuyahoga and Summit Counties?

8 A. Yes, sir.

9 Q. Now, you have -- going back --
10 we touched on this earlier. In Deposition
11 Exhibit 3, you have four different scenarios,
12 and correct me if I'm wrong, but I believe
13 you testified earlier that Scenario A is no
14 longer in play, for lack of a better term; is
15 that fair?

16 A. Yes.

17 Q. So the focus would be on
18 Scenarios B, C and D; is that correct?

19 A. Yes.

20 Q. Okay. And so we talked earlier
21 that Scenario C is simply Scenario A with the
22 corrections included on the first page of
23 Exhibit 3, correct?

24 A. Yes.

25 Q. And can you describe for me

1 what Scenario B is?

2 A. Scenario B provides an estimate
3 that assumes that -- the status quo with
4 respect to the provision of treatment for
5 opioid addiction and other services for
6 opioid use disorder over time.

7 So Scenario B assumes that
8 there's no increased treatment provided for
9 opioid use disorder; that there is no
10 reduction in the churning of patients that
11 have opioid use disorder; and that the
12 population in year one of these estimates, in
13 other words, the 2019 population, is fixed
14 for the remaining nine years of observation.

15 So essentially -- and that
16 there's no infrastructure expansion for the
17 treatment of opioid use disorder.

18 So Scenario B essentially
19 assumes the status quo, takes the costs of
20 treatment in year one, assumes the
21 populations remain fixed as they are in year
22 one, in other words, doesn't account for any
23 changes in dynamic population flow, and
24 multiplies by ten and accounts for the price
25 of inflation.

1 Q. It also doesn't take into
2 account any changes in the populations as a
3 result of the abatement remedies actually
4 working, right?

5 A. That's correct.

6 Q. Now, I want to go back before
7 we move on to Scenario A versus Scenario C.

8 On the first page there's a
9 list of changes that you made to the redress
10 models, and those changes are all reflected
11 in the numbers that you included in
12 Scenario C, correct?

13 A. Yes, sir.

14 Q. And some of those changes were
15 relatively minor, such as changing the number
16 of detectives required for large police
17 departments for specialized overdose units
18 from ten to seven, right?

19 A. Yes, sir.

20 Q. Or changing the number of
21 detectives from four to three in a midsize
22 police department, correct?

23 A. Yes, sir.

24 Q. But cumulatively, when you made
25 all these changes -- well, first of all, let

1 me back up.

2 Does the fact that you made all
3 these changes, these corrections, mean that
4 the numbers that were included in Exhibits 1
5 and 2 were incorrect?

6 A. No, they were our best -- they
7 were my best estimates at the time, and these
8 updates reflect what I believe are better
9 estimates.

10 Q. For example, you changed the
11 post-incarceration population downward by
12 more than 50%, correct?

13 A. That's correct.

14 Q. You went from 250,000 to
15 120,000; is that correct?

16 A. Yes, sir.

17 Q. And the net result of all these
18 changes was a change in the total national
19 abatement costs from 452.9 billion to
20 \$382.6 billion, correct?

21 A. Yes, sir.

22 Q. And that's \$70.6 billion -- I'm
23 sorry, \$70.3 billion of difference, right?

24 A. Yes, sir.

25 Q. And that's based solely on the

1 12 updates that you made in Deposition
2 Exhibit 3?

3 A. Yes, sir.

4 Q. You didn't change any trend
5 ratios.

6 A. Between which scenarios?

7 Q. Well, between A and C,
8 Scenario A and Scenario C.

9 A. I do not believe we did.

10 Q. And you made no other changes
11 other than the changes that are reflected on
12 the first page of Deposition Exhibit 3?

13 A. I believe that's the case, yes.

14 Q. So let's take a look at
15 specifically the change that you made on the
16 first page of Exhibit 3 to the
17 hepatitis C/HIV line.

18 Do you see that?

19 A. Yes, sir.

20 Q. You changed the annual cost of
21 hepatitis -- HCV treatment -- what's HCV
22 treatment?

23 A. Hepatitis C.

24 Q. And you changed the annual cost
25 of hepatitis C treatment from \$50,400 to

1 \$26,400, correct?

2 A. Yes, sir.

3 Q. And why did you make that
4 change?

5 A. I thought the latter value was
6 a better estimate.

7 Q. What did you base the initial
8 value of 50,400 on?

9 A. I believe -- you know, there
10 were dozens if not hundreds of sources used
11 in this, and I believe these would have been
12 produced for you as part of an Excel document
13 that's listed as abatement sources.

14 Q. And so --

15 MR. SNAPP: Could I have my
16 screen, please. Thank you.

17 BY MR. SNAPP:

18 Q. I'm showing what I believe is
19 the source that you're referring to, and I've
20 highlighted a particular line that shows your
21 source of 26 -- for the 26,400.

22 A. Uh-huh.

23 Q. Do you see that?

24 A. Yes, sir.

25 Q. And your source is a pharma

1 blog called fiercepharma.com, correct?

2 A. Yes, sir.

3 Q. And you're aware that
4 fiercepharma.com is a blog that anyone can
5 post to as long as they're registered?

6 A. I'm not -- I mean, I would want
7 to see this -- I'd be happy to look at this
8 information in detail with you, but I -- I'm
9 sorry.

10 Can you ask the question again,
11 please?

12 Q. I'm just trying to understand.

13 A. Yeah.

14 Q. Let me ask a different
15 question.

16 Is fiercepharma.com a reliable
17 source that's typically used by experts in
18 your field?

19 A. Well, it would depend on what
20 the information is that's sourced within the
21 article itself.

22 Q. So is the answer to my question
23 that you don't know right now, sitting here?

24 A. Well, I -- you know, I don't
25 think that -- just because something is in a

1 blog doesn't mean that it's high-quality
2 scientific information or low-quality
3 scientific information. I think one has to
4 have more information in order to judge the
5 quality of the information that's contained.

6 MR. SNAPP: Can you turn it
7 off, please. Thank you.

8 BY MR. SNAPP:

9 Q. Sir, I'm now showing you --

10 MR. SNAPP: Just one second,
11 I'm sorry. Sorry. Okay. Go ahead,
12 please.

13 BY MR. SNAPP:

14 Q. I'm now showing you the same
15 line for your April 3rd report.

16 A. Uh-huh.

17 Q. And the source you cite there
18 is an article called Surprise: Gilead's hep
19 C wonder Harvoni costs less in the U.S. than
20 in EU, Japan. It again was retrieved from
21 FiercePharma, correct?

22 A. Yes, sir.

23 BY MR. SNAPP:

24 Q. So it looks like you changed
25 sources for this number, and that was the

1 only thing you did to change the assumption
2 from 50,400 to 26,700, correct?

3 A. No --

4 Q. I'm sorry, 26,400. My
5 apologies.

6 A. Yeah. These may have
7 represented -- I would need to look at the
8 information contained within these articles.
9 In other words, these articles may have
10 quoted the national acquisition costs. They
11 could have quoted a different cost,
12 et cetera.

13 So I don't think that I can
14 judge the -- or really discuss the quality of
15 the information from the blog site alone.

16 Q. Okay. But did you analyze,
17 before using the blog site that's used here
18 on the screen right now that is from your
19 April 3rd report -- did you analyze whether
20 the data underlying that 50,400 number was
21 valid?

22 A. I believe the costs of hep C
23 treatment have continued to decline, and so
24 our reduction in estimates from \$50,400 to
25 \$26,400 was incorporated into updates to the

1 model to reflect what I believe to be lower
2 costs of hepatitis C treatment.

3 And so that's what accounts for
4 the reduction in -- you know, the reductions
5 in the estimates between Scenario A and
6 Scenario C.

7 Q. Do you expect the costs of
8 treatment for hepatitis C to continue to
9 decline?

10 A. You know, with current
11 treatments on the market, I do. But, you
12 know, there's continued innovation and drug
13 costs are hard to predict.

14 Q. And so did you do anything in
15 your model to account for the potentially
16 decreasing costs of hepatitis C treatment
17 over the next ten years that you've modeled
18 out?

19 A. We did not.

20 Q. Now, in terms of the --

21 MR. SNAPP: You can take it
22 down, thank you.

23 BY MR. SNAPP:

24 Q. -- the impact of this one
25 change from 50,400 to 26,400 for the annual

1 cost of HCV treatment, if you turn to page 3
2 of 3 of Deposition Exhibit 3 that you have in
3 front of you --

4 A. Yeah.

5 Q. -- you can see in line 9 that
6 the change was from \$32.5 billion nationally
7 to \$23.9 billion, correct?

8 A. Yes.

9 Q. So it's -- if my math is right,
10 it's over \$11 million [sic], correct -- just
11 under 11 million, I guess.

12 A. Yes.

13 Q. I'm sorry, 11 billion. I
14 said million. It's 11 billion, correct? My
15 math is off.

16 A. Well, it's the difference
17 between 23.9 and 32.5 --

18 Q. My math is off. It's over
19 \$9 billion, correct?

20 A. Yes, sir.

21 Q. All right. I apologize. My
22 math is a little rusty.

23 So do you agree, sir, that
24 small changes to the input assumptions in
25 your model can have major impacts on the

1 estimated abatement costs on a national
2 level?

3 A. It depends.

4 Q. On what?

5 A. On what specific abatement
6 category one is considering and the
7 population affected.

8 Q. Okay. Well, we'll take a look
9 at some more of those in a bit, but, first of
10 all, let me ask you that -- I want to go back
11 to the differences between the various
12 scenarios in Exhibit 3.

13 I think you've described
14 Scenario B. Can you describe what Scenario D
15 shows?

16 A. Scenario D provides estimated
17 costs of abatement over ten years at a
18 national level assuming interventions are
19 implemented to increase the uptake of MAT,
20 decrease the rate at which patients churn
21 through MAT and discontinue it, expand
22 naloxone distribution and reduce prescription
23 opioid prescribing.

24 So these estimates in
25 Scenario D reflect the result of a smaller

1 population requiring many, but not all, of
2 these abatement categories.

3 Q. In other words, you attempted
4 to estimate the impact of certain abatement
5 programs on the model's parameters; is that
6 correct?

7 A. No.

8 Q. It's not?

9 A. No.

10 Q. Isn't that what you just told
11 me in terms of reducing opioid prescribing,
12 expanding uptake and reducing churn and
13 distributing naloxone?

14 A. It was to estimate the effect
15 of these interventions on the model output,
16 not on the model parameters.

17 Q. Okay. Sorry if I misspoke.

18 So you attempted to estimate
19 the impact of those certain abatement
20 programs on the model's output in terms of
21 national abatement costs, correct?

22 MS. RITTER: Objection, form.

23 A. I don't -- yeah, I don't think
24 so. We attempted to model the impact of
25 different interventions on -- we attempted to

1 assess how much less it would cost to abate
2 the epidemic if several interventions were
3 implemented simultaneously, and those three
4 interventions, one was an MAT intervention,
5 which has two components, increasing the use
6 of MAT and decreasing the churn of patients
7 through MAT.

8 The second was a naloxone
9 intervention and the third was an opioid
10 prescribing intervention.

11 So we attempted to look at how
12 much less it would cost to abate the epidemic
13 if these interventions were implemented.

14 BY MR. SNAPP:

15 Q. So specifically with respect to
16 the opioid prescribing intervention, what
17 components of your analysis are included
18 within that opioid prescribing intervention?

19 A. Can you be more specific when
20 you say what components of our analysis?

21 Q. What abatement categories fall
22 within the opioid prescribing intervention?

23 A. Well, the -- what do you mean
24 by fall within? Do you mean what --

25 Q. You have 15 -- on page 3 of

1 Exhibit 3 --

2 A. Yeah.

3 Q. -- you have 15 different
4 abatement categories. These are the same
5 categories that appeared in Exhibits 1 and 2,
6 correct?

7 A. Right. Yes.

8 Q. So I'm asking: These are
9 different abatement strategies --

10 A. That's right.

11 Q. -- interventions, correct?

12 A. Yeah.

13 Q. And are any of these
14 interventions that are listed in numbers 1
15 through 15 included within the opioid
16 prescribing intervention that you
17 incorporated into Scenario D?

18 A. Okay. The primary abatement
19 category -- I mean, there's several remedies
20 that I discuss in my report that I believe
21 can positively impact the quality of opioid
22 prescribing.

23 For example, academic detailing
24 is focused squarely on trying to train
25 prescribers and nonprescribers alike in

1 appropriate treatment of pain as well as the
2 identification and management of patients
3 that have opioid use disorder.

4 So there are several -- several
5 of the remedies could potentially impact
6 prescribing.

7 Q. Other than academic detailing,
8 which other ones?

9 A. Well, I mean, on the back end,
10 something like drug disposal programs affects
11 the oversupply of opioids in the population.
12 Prescription drug monitoring programs can
13 impact prescribing. Research can impact
14 prescribing. Law enforcement indirectly can
15 impact prescribing.

16 So many of these -- pregnant
17 women and neonates, I mean, prescription of
18 opioids is kind of embedded through this mass
19 media campaign. But I think the one that
20 most squarely addresses it is -- so I would
21 say that several of these categories can
22 affect prescribing.

23 Q. But the one that most squarely
24 addresses it is academic detailing, correct?

25 A. Well, I mean, that's

1 academic -- the academic detailing remedy is
2 designed to train prescribers and
3 nonprescribers alike in the evidence-based --
4 in evidence-based treatment of patients with
5 pain as well as use of opioids as well as
6 identification and treatment of people with
7 opioid use disorder.

8 Q. So what methodology did you
9 employ to identify the impact that certain
10 abatement interventions would have on the
11 populations in Scenario D?

12 A. We -- I provide more
13 information regarding the assumptions that we
14 make regarding the impact of different
15 interventions in documents that I think have
16 been produced in this case, including a
17 technical appendix and a tab within the model
18 itself.

19 Q. To my knowledge, we do not have
20 a technical appendix with respect to
21 Scenarios B, C and D. Is that something that
22 you provided to counsel?

23 A. I believe so, although I think
24 that information also is largely contained
25 within the Markov model, the Excel document

1 itself.

2 Q. There is a technical appendix
3 attached to Exhibit 1 from April 3rd, but it
4 does not include information with respect to
5 Scenarios B, C and D.

6 A. Oh, I think --

7 Q. Correct?

8 A. I'm sorry for any confusion.
9 So I think this is the technical appendix
10 that I'm referring to.

11 Q. Okay.

12 A. Scenario B -- the information
13 about Scenarios B, C and D is provided within
14 this document itself.

15 Q. Okay.

16 A. So I don't know if that answers
17 your question, but the technical appendix
18 that I was referring to is what's provided as
19 a -- at the end of Exhibit 1.

20 Q. All right. I'm going to switch
21 to another spreadsheet that I want to show
22 you in a moment.

23 A. And I would just note that the
24 estimates of the magnitude of the
25 interventions that we assessed were built

1 upon and built from estimates that have been
2 assessed in other models that have been
3 performed.

4 So, for example, reduction in
5 opioid prescribing. You know, in the
6 intervention that we assessed, we modeled
7 the -- in Scenario D, we modeled the impact
8 of, say, a 5% additional annual decrease in
9 rate of opioid prescribing.

10 Q. One thing you did not do in
11 Scenario D was account for, for example, in
12 your mass media campaign, those numbers
13 remained constant in all of the scenarios,
14 correct?

15 A. Correct. So we apply -- I'm
16 sorry. Yes, correct. We do not apply trend
17 ratios to every abatement category.

18 Q. And so the same is true for the
19 academic detailing piece, correct?

20 A. I believe that's correct, and I
21 believe there was a document produced that
22 listed the abatement categories where we did
23 or did not apply a trend ratio.

24 Q. But in terms of the effects of
25 the 15 different abatement strategies that

1 you're proposing as part of your national
2 model, you're assuming that the mass media
3 campaign and the academic detailing would
4 remain constant throughout the ten-year
5 period, correct?

6 A. That the -- that the -- we're
7 assuming that the investments in those would
8 be a constant investment, yes.

9 Q. And you're not taking into
10 account the fact that some of those -- the
11 need for some of those interventions might
12 decrease over time, correct?

13 A. The -- correct. The need for
14 them could decrease or it could increase, or
15 it could stay the same. And our model
16 provides a framework that would allow for one
17 to test different -- different trajectories
18 of the epidemic.

19 Q. All right. I want to take a
20 look at your calibration spreadsheet for
21 the --

22 MR. SNAPP: If we put it on the
23 screen, please.

24 MS. RITTER: Is this all going
25 to be part of the same thumb drive?

1 Or are you making different exhibits?

2 This is all the same?

3 MR. SNAPP: So what we can
4 do -- we can talk about it off the
5 record, but I want to make sure that
6 the record is clear as you want.

7 MS. RITTER: Yeah, that's
8 what --

9 MR. SNAPP: Why don't we talk
10 about it off the record because I want
11 to make sure that we have it all
12 perfectly clear.

13 MS. RITTER: Okay.

14 MR. SNAPP: I think there might
15 be only one spreadsheet that's too
16 voluminous to mark as an actual
17 exhibit. It's just easier to show
18 them on the screen. The one that I'm
19 talking about is the one that's on the
20 screen now.

21 MS. RITTER: I mean, I would
22 have an objection for foundation if
23 it's not really clear what document
24 you're --

25 MR. SNAPP: Ill try to make it

1 perfectly clear.

2 MS. RITTER: Yeah.

3 BY MR. SNAPP:

4 Q. So we're now looking at the
5 calibration tab for the spreadsheet we
6 received from your counsel that's entitled
7 MAT Model 2.0 version 51, correct?

8 A. Yes, sir.

9 Q. And I'm particularly focusing
10 your attention on the total OUD lines 20 and
11 21, correct?

12 A. Yes, sir.

13 Q. So I've got those highlighted
14 here. Let me highlight them so it's clear.
15 Sorry. All right.

16 So in these you show in line 20
17 actual data based on the national survey,
18 right?

19 A. (Nods head.)

20 Q. How do you pronounce it?

21 A. NSDUH, National Survey on Drug
22 Use and Health.

23 Q. NSDUH, okay. And below that
24 you show your model outputs for the same
25 number, for total OUD, correct?

1 A. Yes, sir.

2 Q. And that's in line 21.

3 And in every year from 2011 to
4 2016 your model overestimated the total OUD
5 population based on actual experience,
6 correct?

7 A. Well, I think in the first
8 year, isn't our model lower than the actual?

9 Q. I'm sorry, I said 2011 to 2016.

10 A. Oh, I see, yes, yes.

11 Q. So 2011, '12, '13, '14, '15 and
12 '16, your model overestimated the total
13 over -- I'm sorry, opioid -- tell me what OUD
14 is.

15 A. OUD, opioid use disorder.

16 Q. Thank you, opioid use disorder.
17 Your model overestimated opioid use disorder
18 population in every one of those years from
19 2011 to 2016, correct?

20 A. Yes, sir.

21 Q. In fact, it was 15% higher in
22 2016. If you look at 2016, this column,
23 column O, this is the 2016 predicted versus
24 actual.

25 And in 2016, you were 15%

1 higher than the actual data, correct?

2 A. Yes, sir.

3 Q. Now, did your model -- did you
4 do anything to address in your model the fact
5 that your model was overpredicting the
6 population for opioid use disorder?

7 A. Well, I mean, this model has
8 dozens of moving parts, and overall, I was
9 pleased with the -- and felt satisfied for
10 the purposes of this report in the
11 calibration that we were able to achieve.

12 Opioid use disorder is -- you
13 know, there are a number of shortcomings in
14 the ways that opioid use disorder is captured
15 and defined in the NSDUH, and so we -- so I
16 feel that this is -- you know, so we focused
17 on calibrating the model most tightly to more
18 recent years and to outcomes and populations
19 such as the population with the total
20 population and the population with overdose
21 that we had the greatest confidence in.

22 Q. So is the answer to my question
23 that you did not do anything to try to
24 recalibrate your model based on the 15%
25 difference in 2016 between your model's

1 predictions and the actual-world data?

2 A. That's not -- not the case.

3 Q. What did you do to try to
4 change your model so that it was -- it more
5 closely tracked real-world experience as
6 demonstrated by the NSDUH data?

7 A. Right. So in the course of
8 building a model, one is continuously
9 examining and evaluating the inputs and
10 parameters and evaluating their impact on any
11 number of outcomes.

12 And the calibration of the
13 model is one set of outcomes that one is
14 continually using as the model is being built
15 and refined.

16 Q. So does your final --

17 A. It's like --

18 Q. I'm sorry, go ahead.

19 A. It's like a control panel, I
20 mean, that one is looking at this as one of
21 many measures of -- in the process of
22 building and developing a model.

23 Q. But does your model in its
24 final form include an estimate for 2016 of
25 total OUD that's 15% higher than the NSDUH

1 data?

2 MS. RITTER: Objection, asked
3 and answered.

4 A. Yes, it does.

5 BY MR. SNAPP:

6 Q. Let me look at another line,
7 which -- and then we can take a lunch break
8 after this, but let me look at another line,
9 lines 42 and 43, which I've highlighted on
10 the screen.

11 And these are data related to
12 overdose death Rx. What does that mean?

13 A. Overdose deaths attributed to
14 prescription opioids.

15 Q. And that data came from -- the
16 real-world data, actual data came from the
17 CDC, correct?

18 A. Yes, sir.

19 Q. And is that CDC WONDER data?

20 A. Yes, sir.

21 Q. Now, does the CDC WONDER data
22 have any shortcomings?

23 A. Yes, it does.

24 Q. You mentioned earlier that
25 there were certain shortcomings with

1 calculation of OUD in the NSDUH data. Can
2 you describe those shortcomings first, and
3 then I'll ask you about the CDC shortcomings?

4 A. The NSDUH data, the data from
5 the National Survey on Drug Use and Health,
6 does not capture well individuals who may be
7 institutionalized, individuals who may be in
8 jail or in long-term care facilities,
9 individuals who are homeless, nor does it
10 capture individuals that may have a lifetime
11 history of opioid use disorder but not active
12 or past-year opioid use disorder.

13 And this is a difference and an
14 improvement of our model compared with many
15 others, because our model does account for
16 the 2.5 to 3 million people that may have
17 lifetime use of -- opioid use disorder but
18 not past-year opioid use disorder.

19 Q. So is your expectation based on
20 the fact that they're not -- they don't have
21 past-year opioid use disorder, is your
22 expectation that they'll enter the opioid use
23 disorder population actively at some time in
24 the future?

25 A. Some, absolutely.

1 Q. How did you -- what are you
2 relying on to calculate how many of those
3 nonactive lifetime opioid use disorder
4 population are going to actually reenter the
5 active OUD population?

6 A. Here again, our model included
7 dozens, if not more, sources and populations,
8 and I would want to refer to that
9 documentation in order to, you know, provide
10 that for you.

11 Q. Let's take a look at what we
12 have on the screen right here. Before we do
13 that, you mentioned there were some
14 shortcomings with respect to the CDC WONDER
15 data that you used in line 42. Can you
16 describe those shortcomings for us?

17 A. Well, I think one concern is
18 the adequacy of attribution of death within
19 the data and variation across -- you know, so
20 I think that's one of the main shortcomings.

21 Q. Explain that, please.

22 A. Well, it's not always obvious
23 or clear to determine how someone died.

24 Q. Do you know how it's determined
25 in Cuyahoga or Summit County how someone

1 dies?

2 MS. RITTER: Objection, form.

3 A. It's -- you know, it's not what
4 I was asked to assist the courts with. My
5 belief is that they have medical examiners.

6 BY MR. SNAPP:

7 Q. And so what are some of the
8 issues that arise in terms of medical
9 examiners or others determining the cause of
10 death when there are drugs involved?

11 A. I mean, that's beyond the scope
12 of what I was asked to assist with in this
13 setting.

14 Q. But you acknowledge that there
15 are certain challenges with identifying
16 opioid-related deaths like the ones you
17 talked about before?

18 A. My sense is identifying cause
19 of death can be tricky for a number of
20 reasons. I mean, if you have just a body
21 that shows up at the morgue, trying to walk
22 through the cause of death I think can be a
23 complicated task.

24 Q. For example, there might be
25 polysubstance use?

1 A. Yes.

2 Q. And then do you know how a
3 medical examiner or other might decide of the
4 various substances that show up in the
5 toxicology screen, which one of those they
6 might attribute as the cause of death? Do
7 you know how that's done?

8 A. I do not.

9 Q. But that's one of the
10 limitations of using the CDC WONDER data,
11 correct?

12 A. Well, I think the wonder
13 data -- I'm sorry, can you please repeat the
14 question?

15 Q. So one of the limitations of
16 using CDC WONDER data is the fact that
17 different jurisdictions, different medical
18 examiners, different people evaluating the
19 cause of death might reach different
20 conclusions based on the same toxicology
21 screen?

22 A. I believe that's true.

23 MR. SNAPP: Okay. Why don't we
24 take our lunch break now.

25 MS. RITTER: Okay.

1 THE VIDEOGRAPHER: Going off
2 the record at 12:43 p.m.

3 (Recess taken, 12:43 p.m. to
4 1:14 p.m.)

5 THE VIDEOGRAPHER: We're back
6 on the record at 1:14 p.m.

7 (Whereupon, Deposition Exhibit
8 Alexander-8, Spreadsheet, Medical
9 Assisted Treatment, etc., was marked
10 for identification.)

11 MR. SNAPP: Okay. Just for
12 housekeeping purposes, Doctor, I'm
13 handing you what's been marked as
14 Exhibit 8, and this is the spreadsheet
15 that we looked at on the screen
16 earlier that shows the cost -- well,
17 this is the one from April 17th. It's
18 the one that's called Monument
19 Analytics Abatement Sources, 7
20 April 19 V10. I'm just marking it for
21 the record, and here's a copy for
22 counsel.

23 MS. RITTER: And you're saying
24 you want him to confirm that this is
25 the one you asked him about? Is that

1 what you're asking?

2 MR. SNAPP: I'm just putting it
3 in the record just so we have a copy
4 of everything that was in the record.
5 That's all.

6 MS. RITTER: So that's what
7 you're saying this is.

8 MR. SNAPP: Yes.

9 MS. RITTER: Okay.

10 MR. SNAPP: I am. He's welcome
11 to check it during a break if he
12 wants, but I'm representing that
13 that's what it is.

14 (Whereupon, Deposition Exhibit
15 Alexander-9, Spreadsheet, Medical
16 Assisted Treatment, etc., was marked
17 for identification.)

18 MR. SNAPP: And this one that
19 I'm marking as Exhibit 9 is the
20 Monument Analytics Abatement Sources
21 from April 3rd, so it's the same
22 spreadsheet only from the April 3rd
23 report.

24 THE WITNESS: Uh-huh.

25 MR. SNAPP: And that's

1 Deposition Exhibit 9. Okay.

2 BY MR. SNAPP:

3 Q. So, sir, we were talking about
4 your model, and specifically we were looking
5 at the calibration sheet -- let me pull that
6 up again and put it back on the screen.

7 We're looking at MAT Model 2.0
8 Version 51 on the screen right now, the
9 calibration tab.

10 A. That's great. That's great.
11 Thank you.

12 Q. I started asking you about
13 lines 42 and 43, which are overdose death
14 statistics, correct?

15 A. Yes, sir.

16 Q. And line 42, which I'm
17 highlighting now, says: Actual overdose
18 death Rx actual, and it cites as a source
19 CDC, correct?

20 A. Yes, sir.

21 Q. Line 43 directly under that,
22 which I'm highlighting now, says: Model
23 overdose death Rx, and those are the
24 numbers -- that line shows the numbers that
25 were predicted by your model, correct?

1 A. Yes, sir.

2 Q. And am I correct that your
3 model relative to the CDC actual data
4 overestimated overdose deaths from
5 prescription opioids in every year shown on
6 this sheet --

7 A. I don't --

8 Q. -- except 2015, it looks like.
9 I'm sorry.

10 MS. RITTER: Objection to form.

11 THE WITNESS: Could you ask the
12 question again, please.

13 MR. SNAPP: Certainly.

14 BY MR. SNAPP:

15 Q. Can you tell me which years,
16 based on these two lines, your model as shown
17 in line 43 overestimated overdose deaths --
18 prescription overdose deaths when compared to
19 the CDC data in line 42.

20 A. Well, I can't see the subject
21 headers at the top to know the years, but --

22 Q. Sure.

23 A. Okay. 2010 through 2018.

24 Q. E is 2010.

25 A. Okay. So it looks to me as if

1 for the last two years our model -- so for
2 2010, '11, '12, '13, '14 and '15, I believe
3 our model reports a greater number of
4 overdose deaths.

5 Q. Than the CDC data?

6 A. That's right, than the CDC
7 data. 2016, they're remarkably similar, I
8 mean, a difference of 31 or something, 36 out
9 of 17,000 deaths, so they're more or less the
10 same, very, very similar. And then the last
11 year, our model predicts a very slightly
12 greater number of overdose deaths than the
13 CDC data.

14 Q. You're talking about 2017?

15 A. That's right.

16 Q. Okay.

17 A. I'm comparing 17,075 to 17,029.

18 Q. Now, looking at O, which
19 compares 2016 -- I'm talking about column O.
20 It compares 2016 predicted versus actual
21 numbers.

22 A. Uh-huh.

23 Q. You show that your model
24 overestimated the number by 10.3%; is that
25 correct?

1 A. Well, can you click on the
2 10.3%, please, to see what the formula is.

3 Q. Yes, I've clicked on it right
4 now. It shows J43 over J42 minus 1.

5 MS. RITTER: Objection, form.
6 Plus, I've lost the question.

7 A. So it looks to me as if that is
8 calculating the difference in the overdose
9 deaths from the year represented by column J,
10 which would be 2015, which is not the most
11 recent year of observation.

12 BY MR. SNAPP:

13 Q. Okay. But in 2015 your model
14 predicted 10.3% more deaths than actual
15 numbers shown by CDC WONDER data, correct?

16 A. Yes, sir, I believe so.

17 Q. Now, did you do anything --
18 does your model do anything to account for
19 this variance between your predictions and
20 the actual real-world data according to the
21 CDC?

22 A. Yes. Yes, we did.

23 Q. How so?

24 A. As I noted before, as we build
25 and design and iteratively develop the model,

1 I'm continually examining the -- the
2 calibration of the model is one of the
3 factors that we use as we evaluate its
4 adequacy.

5 Q. But in terms of predicting
6 future overdose deaths, you didn't do
7 anything to correct for the fact that your
8 model predicted many more -- 10.3% more
9 overdose deaths in 2015 than were actually
10 shown by the CDC data, correct?

11 A. Well, we -- you know, in -- the
12 calibration of the model, the model --
13 because, you know, changing a model parameter
14 can affect multiple things, I'm
15 continually -- the model is calibrated with
16 an attention towards all of the -- its global
17 performance.

18 And so I don't recall
19 specifically the number of times and the
20 approaches that we used to see whether we
21 could better calibrate this parameter without
22 affecting a different parameter.

23 Q. Because if you make a small
24 change in one part of the model, it could
25 impact other parts of the model dramatically,

1 correct?

2 A. The model is interdependent,
3 but it all depends.

4 Q. But it's conceivable that a
5 small change to one parameter could impact
6 other portions of the model, correct?

7 A. Yes, it is.

8 Q. And ultimately, that small
9 change could impact in a significant way the
10 amount of national abatement costs that
11 you're calculating at the end of your model,
12 correct?

13 A. Well, it -- it depends.

14 Q. It depends on what the
15 parameter is that you're changing I assume,
16 correct?

17 A. Yes. And the magnitude of the
18 change and what -- how one defines small.

19 Q. Sir, I'm going to switch to --
20 switch the screen to a different one of the
21 spreadsheets, and this one is Monument
22 Analytics Abatement Sources 17 April 19 V10,
23 which we've previously marked as
24 Deposition Exhibit 8. And the way, when I
25 printed it out, each --

1 A. I'm with you.

2 Q. Two pages, you have to lay them
3 down next to each other. Exactly. Thank
4 you. But I can show them on the screen for
5 purposes of what we're going to be looking at
6 here.

7 Now, I want to talk to you
8 about, in developing your model to predict
9 national abatement costs, you had to make
10 certain assumptions; is that correct?

11 A. Yes.

12 Q. And I want to talk to you about
13 the assumptions that you made. Let's take a
14 look at them.

15 So in -- I'm going to highlight
16 on the screen Exhibit 8, lines 6, 7 and 8.
17 You see I've highlighted them? Those values
18 are assumed for purposes of the model,
19 correct?

20 A. Yes.

21 Q. And if we go down to -- sorry.
22 If we go down to line 20, the mass media
23 target population is also assumed, correct?

24 A. Yes.

25 Q. How did you -- how did you come

1 up with the number of 150 million for the
2 mass media target population?

3 A. Well, this is an epidemic
4 that's national in scope and affects, you
5 know, tens of millions or hundreds of
6 millions of people. So we felt that this was
7 a reasonable starting point as an assumption
8 for the number of people that might be
9 reached.

10 Q. So were you trying to target a
11 certain percentage of the overall U.S.
12 population?

13 A. No.

14 Q. How did you come up with the
15 number of 150 million?

16 A. Once again, it was based on
17 what we believed would be a reasonable
18 starting point for estimates and discussion
19 around abatement costs for a media campaign.

20 Q. So in order to figure out how
21 much -- what the target population in
22 Cuyahoga and Summit Counties were, you'd need
23 to actually understand the actual population
24 of those counties; is that correct?

25 A. Can you ask that again, please?

1 Q. If you wanted to localize the
2 mass media target population to Cuyahoga and
3 Summit Counties, how would you do so?

4 A. Well, one would want to know
5 the size of the population and the nature of
6 the media markets in those counties.

7 Q. Okay. But you haven't done
8 that?

9 A. No.

10 Q. If we go down to line 28, this
11 is the length of first responder training.
12 That's another assumed number, correct?

13 A. Yes, sir.

14 Q. And if we look at line 30, is
15 that another assumed number of the cost per
16 first responder training?

17 A. Yes, sir.

18 Q. And then if we go down to
19 line 47, which is the residential program
20 population for pregnant women, is that
21 another assumed number, sir?

22 A. Yes, sir.

23 Q. And if we go down to line 52,
24 the cost per detailer per year, is that an
25 assumed number also, sir?

1 A. Well, there are -- I think we
2 provide some information there as you've
3 highlighted.

4 Q. Right. In fact, it's based on
5 four separate assumptions within that
6 particular parameter, correct? It says:
7 These costs are based on several assumptions.
8 Number one, detailers would work
9 approximately 2,000 hours per year or 250
10 eight-hour days.

11 Number two, approximately one
12 fifth of the detailer time would be
13 administrative.

14 Number three, detailers would
15 see approximately three prescribers per day
16 and visit each prescriber once per calendar
17 quarter, thus seeing approximately 150 unique
18 prescribers per year.

19 Number four, the salary for a
20 detailer, typically a trained pharmacist,
21 would be approximately \$125,000 per year.
22 With travel, fringe and administrative
23 support, the cost per detailer would be
24 approximately \$176,000 per year.

25 So is it fair to say that

1 line 53, the cost per detailer per year, is
2 itself an assumed number based on four
3 separate assumptions?

4 A. Yes. Although we -- yes, it
5 is, although I consulted with -- I mean, I
6 reviewed some source information about
7 academic detailing in order to derive that
8 estimate.

9 Q. But it's an assumed number for
10 purposes of your analysis, correct, the
11 276,000?

12 A. Yes. Yes.

13 Q. And if we look at line 56,
14 number of physicians visited by a detailer
15 per day, that's also an assumed number,
16 correct? It says right here, assumed in --

17 A. Yeah, I don't know why --

18 Q. -- D.

19 A. Yes, I think it's an assumed
20 number, although I don't fully understand the
21 300. There must have been -- I don't think
22 that the value in the cell B56 is accurate,
23 but I would guess that that was an assumed
24 number, the number that would be visited a
25 day.

1 Q. Okay. I'm not sure where the
2 300% either came from, because in the
3 printout it shows as 3.

4 A. Yeah, I would expect 3 sounds
5 like the right number.

6 Q. Is it all right with you if I
7 change that to 3 just so we're clear?
8 Because I'm not sure why that came up that
9 way.

10 A. Well, I'd want to consult the
11 materials --

12 Q. Fine, absolutely.

13 A. -- but if you want to for the
14 purposes of this discussion, that's fine.

15 Q. We'll leave it. We'll leave it
16 as it is.

17 A. Okay.

18 Q. Line 57, number of unique
19 physician visits by a detailer, it says 150,
20 correct?

21 A. Yes, sir.

22 Q. And that's assumed. That's
23 assuming that each physician will be visited
24 each calendar quarter by a detailer, correct?

25 A. Yes, sir.

1 Q. And then line 58 and 59 are
2 also assumed numbers, correct?

3 A. Yes, sir. Although once again,
4 as with other estimates that I've provided
5 for academic detailing, I reviewed a number
6 of source documents that I include in my
7 expert report, and I believe that I may have
8 used some of these in order to provide the --
9 in order to -- as a basis for the assumptions
10 that are contained herein.

11 Q. But in many of these other
12 lines, you've provided a source for the
13 numbers, right?

14 A. Right.

15 Q. And for these that you just
16 said "Assumed," you're just coming up with a
17 number and plugging it in based on, I guess,
18 your general knowledge based on the
19 experience you've had, or what's it based on?

20 A. I don't recall precisely how I
21 derived these estimates, but I have reviewed
22 many scientific papers about academic
23 detailing, and I've also reviewed proposals
24 that have been written for the conduct of
25 academic detailing. So that is to support

1 academic detailing programs.

2 Q. Well, are these assumptions --
3 some of these assumptions -- and we're going
4 to go through more -- some of these
5 assumptions, assumptions that were made by
6 the seven people that worked on your team to
7 put together this report?

8 A. Well, I mean, ultimately, I
9 supervised the entire time and I take full
10 responsibility for all of the information
11 that's presented within the materials that
12 have been provided for the court.

13 Q. But I'm just trying to
14 understand. Is the reason you don't know
15 what they based a particular assumption on
16 because it was something that was done by one
17 of your team members and not by you directly?

18 MS. RITTER: Objection to form.

19 That's not --

20 THE WITNESS: Can you ask that
21 again, please?

22 MS. RITTER: Foundation.

23 BY MR. SNAPP:

24 Q. Sure.

25 Is the fact that you don't know

1 what the source was for some of these
2 assumptions that we've highlighted, is that
3 fact because those assumptions were actually
4 plugged in by one of your team members
5 instead of you?

6 A. I don't believe so. I -- you
7 know, there are dozens of sources here.

8 Q. Yes.

9 A. But if anything, I would -- but
10 I was closely involved with the development
11 of all of these materials, and I think if
12 anything, if there's an -- if there was a
13 source for which there was unclear value,
14 that would significantly increase rather than
15 decrease the likelihood of my participation
16 in its -- in its estimation.

17 In other words, if there was --
18 the less clear the value, the greater the
19 likelihood that I would have been even more
20 integrally involved.

21 Q. But do you remember
22 specifically any discussions with your team
23 with respect to the assumed values that we've
24 included so far, that we've highlighted so
25 far, I should say, on this sheet?

1 A. I do.

2 Q. Okay. Which ones?

3 A. Well, if we can start from the
4 top.

5 Q. Sure.

6 A. So I recall discussions about
7 the split of different MAT treatments.

8 Q. Okay. But those are still
9 assumed numbers, right?

10 A. They are. And as I note, the
11 current distribution is less evenly weighted
12 across these three treatments.

13 Q. What about the mass media
14 target population and the others highlighted
15 here?

16 A. So I do -- I recall, you know,
17 at the vaguest level, a discussion about the
18 size of the mass media target population.

19 Q. Now, I asked you some questions
20 about trying to localize the mass media
21 target population.

22 In your April 3rd report, you
23 localized one abatement number to Cuyahoga
24 and Summit County by multiplying it by 1.5%,
25 correct?

1 A. Yes, as a -- I think the
2 language that I included in the report about
3 that process captures well my confidence and
4 belief about that calculation.

5 Q. And what is your confidence and
6 belief about that calculation?

7 A. Well, I'd like to refer to my
8 report, if that's okay.

9 Q. It's right in front of you. Go
10 ahead.

11 A. Okay. So in paragraph 175, I
12 note that while the exact costs of abatement
13 are difficult to estimate, and will depend
14 upon the population requiring services -- so
15 we've reviewed that sentence, so I think
16 that's important.

17 Q. Right. You go on to say: It's
18 possible to estimate the cost, nationally, of
19 the efforts required to reduce further harms,
20 in that sentence, correct?

21 A. The costs nationally, correct.

22 Q. Okay.

23 A. And then I note, in 176: I
24 performed preliminary analyses of the
25 national costs. My goal was not to identify

1 the precise costs of any category, but rather
2 to develop an initial estimate from which
3 costs could be based -- and then I discuss
4 my --

5 Q. Could be based, I'm sorry, just
6 to finish. Could be based -- could be
7 developed based on this Court's findings with
8 regard to the nuisance in these
9 jurisdictions. That's what you wrote,
10 correct?

11 A. Correct. Correct.

12 Q. Okay. Go ahead.

13 A. And then I discussed the steps,
14 and then I note in 179: For some categories,
15 specific costs will depend upon decisions
16 made by the Court or its designees, local
17 policymakers and service providers.

18 And I give an example just of
19 one -- one product, naloxone, and the very
20 factors that could influence that.

21 And then I identify potential
22 limitations of extrapolating from the
23 national to a local level.

24 Q. Which paragraph is that?

25 A. 180.

1 And then I -- and then I -- and
2 then I say but nevertheless, and then, you
3 know, I -- and I use just one proxy for the
4 fraction of the global abatement needs that
5 are represented by the counties of interest,
6 Summit and Cuyahoga County. And that's the
7 basis for that calculation.

8 Q. Okay. And you said global
9 abatement. I think you meant national?

10 A. Correct. Correct. Yes.

11 Q. Okay. Very good.

12 So we'll come back to that, but
13 I just want to -- let's continue going
14 through the spreadsheet.

15 A. Yeah.

16 Q. This line 76, percentage of
17 foster and adoption population younger than
18 eight, that's another assumed number,
19 correct?

20 A. Yes, sir.

21 Q. And line 78, rate of IVDU that
22 is opioid use. That's an assumed number,
23 correct?

24 A. Yes, sir.

25 Q. If we go down to line 98 where

1 we're talking about drug disposal programs,
2 lines 98 and 99 are both assumed numbers,
3 correct?

4 A. Yes, sir. Here and in all
5 instances, I should say assumed for the
6 purposes of the estimates that I've provided.

7 Q. And assumed for purposes of
8 running your model to calculate national
9 abatement costs, correct?

10 A. Yes, sir, for these preliminary
11 estimates, yes.

12 Q. If we look at line 119, this is
13 the proportion of individuals served by each
14 SSP. What's an SSP?

15 A. Syringe exchange program.

16 Q. And that's an assumed number
17 also, correct?

18 A. Yes, sir.

19 Q. Now, lines 120 through 128
20 refer to, quote, unpublished federal data as
21 your source.

22 Do you see that?

23 A. I do.

24 Q. What unpublished federal data
25 are you referring to there?

1 A. These were derived from a -- I
2 don't know the specific source for these data
3 points.

4 Q. Who would know?

5 A. One of the team members that
6 assisted me in producing these estimates.

7 Q. And do you know if you provided
8 that unpublished federal data to plaintiffs'
9 counsel so that we could receive it as part
10 of our review of this case?

11 A. I do not know.

12 Q. To my knowledge, we haven't
13 received it, so I'm not sure what it is
14 either.

15 If we look at the next line --

16 A. I mean, I can -- let me just
17 say, I think there was a slide presentation,
18 a PowerPoint deck that contained these
19 estimates, and I think the deck was -- was
20 delivered or built by someone working within
21 a federal agency, but I don't have the
22 specific source in my head, and I don't know,
23 as I said, whether it was provided as part of
24 the materials that were produced.

25 MR. SNAPP: I'm not typically

1 one to request materials during a
2 deposition, but we would like to
3 receive those.

4 MS. RITTER: We made a note of
5 that. I don't remember if you have it
6 or not. I'll have to look.

7 MR. SNAPP: Thank you.

8 BY MR. SNAPP:

9 Q. Now, 132 and 133, lines 132 and
10 133, these are some more assumed values,
11 assumed parameters in your model, correct?

12 A. Yes, sir.

13 Q. And those are the proportion of
14 SCFs in cities similar to Baltimore and
15 proportion of SCFs in cities similar to
16 San Francisco, correct?

17 A. Yes, sir.

18 Q. Now, did you do any analysis of
19 the proportion of SCFs in the cities of Akron
20 or Cleveland or cities similar to Akron and
21 Cleveland?

22 A. No, did not.

23 Q. So why did you choose Baltimore
24 and San Francisco?

25 A. These -- I think that these

1 cities were selected based on population and
2 the -- I don't have a good answer for you. I
3 didn't select these cities.

4 Q. Someone on your team did?

5 A. Yes, sir. And I --

6 Q. And line -- I'm sorry.

7 A. I should mention as well, you
8 had asked for the individuals that worked on,
9 you know, these materials, and so in
10 reviewing this, it occurs to me that two
11 additional people, I should mention. So one
12 is Susan Sherman, S-H-E-R-M-A-N, and the
13 other is Cassandra Crifasi. I believe her
14 last name is C-R-I-F-A-S-I.

15 And so they -- they worked a
16 long time ago -- which is why I wasn't
17 thinking of them actively -- with me on
18 individual abatement categories.

19 Q. How long ago?

20 A. I don't know.

21 Q. Before you started putting
22 together your report?

23 A. Yes.

24 Q. Before your visit to Akron in
25 July of 2018?

1 A. I don't know.

2 Q. Just so we're clear, I
3 highlighted line 129. That's another
4 assumption. I don't think I asked you about
5 that one, but that's another assumed number,
6 correct, the number of new supervised
7 consumption facilities to open in the U.S.?

8 A. Yes, it is.

9 Q. Is that an annual number?

10 A. Yes, it is.

11 Q. And do you have an
12 understanding of whether certain laws would
13 need to be changed to open a supervised
14 consumption facility in some jurisdictions?

15 A. Can you ask the question again,
16 please?

17 Q. Do you know one way or another
18 if supervised consumption facilities are
19 allowed in every jurisdiction in the United
20 States?

21 A. My understanding is that
22 currently they are not.

23 Q. And so in some jurisdictions,
24 there would be a need -- there would need to
25 be a change in law for a new supervised

1 consumption facility to open, correct?

2 A. Yes, sir, I believe that's the
3 case.

4 Q. Do you know if that's the case
5 in Cuyahoga or Summit Counties?

6 A. I believe it's the case.

7 Q. And so the abatement remedy
8 with respect to -- that you're proposing with
9 respect to supervised consumption facilities
10 would require a change in the law in Summit
11 and Cuyahoga counties; is that fair?

12 A. No. I was not asked to design
13 an abatement program for these counties. I
14 was asked to identify evidence-based
15 approaches to abate the opioid epidemic at a
16 national level.

17 And in my report, I both
18 qualify with respect to this particular
19 instance and also note in many places that it
20 really falls upon the communities themselves
21 to review what I've proposed and to decide
22 what they're already doing, what they need to
23 do more of, what they should be doing less of
24 and how it all fits together.

25 Q. Do you know if the judge in

1 this case would be able to order a
2 change in law to require the opening of
3 additional supervised consumption facilities?

4 MS. RITTER: Objection,
5 foundation.

6 A. You said additional -- can you
7 you that --

8 BY MR. SNAPP:

9 Q. Supervised consumption
10 facilities.

11 Do you know if the judge in
12 this case has the power to change the law so
13 that additional supervised consumption
14 facilities can be opened in the U.S.?

15 MS. RITTER: Same objection.

16 A. I do not.

17 BY MR. SNAPP:

18 Q. The next one that I highlighted
19 here is line 137, number of fentanyl testing
20 strips needed per injection, and that's an
21 assumed number, correct, for purposes of your
22 calculations?

23 A. Yes, sir.

24 Q. And line 140, extra costs for
25 program management, administrative personnel,

1 shipping. If you look up at the top,
2 machines set up and maintenance for harm
3 reduction total cost.

4 Do you see that up here?

5 A. Yes, sir.

6 Q. So is that an assumed number
7 also, sir?

8 A. Yes, it is.

9 Q. Please scroll down on the
10 spreadsheet to lines 152 through 156. Are
11 these all numbers that were assumed for
12 purposes of your model?

13 A. Yes, they were. Although here
14 again, these were developed with -- as with
15 many other estimates, with either or both a
16 review of literature and scientific findings
17 as well as a consultation with experts in the
18 field.

19 Q. But for each of these numbers,
20 the midsize police departments, law
21 enforcement-assisted diversion cost and the
22 same cost from small police departments as
23 well as the size of specialized overdose
24 units for large police departments, for
25 midsize police departments and for small

1 police departments, you don't have a source
2 other than to say that you're assuming these
3 numbers, correct?

4 A. For the purposes of the
5 materials that have been produced, we've --
6 I've identified these as assumed values.
7 They are based, once again -- all of these
8 parameters and estimates are based on a
9 combination of our best judgment, my
10 expertise, review of scientific information,
11 and the experience of others that provided
12 input as I developed these estimates.

13 And this really was, once
14 again, intended as a framework for
15 considering the cost of abatement.

16 Q. Understood.

17 And so one last assumed number
18 here is in line 160, which I'm highlighting
19 on the screen, number of hours required for
20 stigma reduction training.

21 That's also an assumed number
22 for purposes of your model; is that correct,
23 sir?

24 A. Yes, sir.

25 Q. So we have gone through, and we

1 counted them up and we can count them up
2 again if you want, but I've highlighted 28
3 separate lines of assumed values within the
4 parameters that you have plugged into your
5 model.

6 Does that sound about right? I
7 mean, you can count them if you'd like.

8 A. I would have to if I --

9 Q. Okay. Well, would you like to,
10 because I'm --

11 A. No, I don't feel the need to.

12 Q. Okay.

13 A. But I just can't -- I'm not
14 positive there are 28, but I take your word
15 for it.

16 Q. There are 28.

17 A. Okay.

18 Q. I'm told there are 28.

19 A. Okay. Fair enough.

20 Q. And that's 28 out of -- you
21 have a total of 164 parameters, correct?

22 I'm sorry, it's actually less
23 than 164 parameters because you've got titles
24 in here.

25 A. Line headers, right.

1 Q. So it's somewhere less than
2 that.

3 A. Okay.

4 Q. So give or take --

5 A. 15.

6 Q. -- roughly 15-20% of your
7 parameters are assumed; is that right, sir?

8 A. I think there are about 150
9 total, and how many did you say were assumed?

10 Q. 28.

11 A. Okay. So it would be about one
12 sixth.

13 Q. So 15 to 20% is accurate?

14 A. Yes.

15 Q. Now, I want to make sure I
16 understand your testimony. You said the
17 assumed parameters, the assumptions were
18 based on judgment, your experience, review of
19 scientific information and the experience of
20 others who provided input as you developed
21 these estimates; is that right?

22 A. Can you please read the list
23 again?

24 Q. Judgment?

25 A. Yes.

1 Q. Your experience?

2 A. Yes.

3 Q. Review of scientific
4 information?

5 A. Yes, sir.

6 Q. And the experience of others
7 who provided input as you developed these
8 estimates, correct?

9 A. Right.

10 Q. So if another expert looked at
11 this model and made different assumptions,
12 would you agree that the results would
13 change?

14 MS. RITTER: Objection, form.

15 A. They -- yes. If -- if you're
16 asking whether if you put in different values
17 do the numbers ultimately change, the answer
18 is yes.

19 BY MR. SNAPP:

20 Q. So in other words, to replicate
21 your model, is it fair to say that one would
22 have to use the exact same assumptions that
23 you did?

24 MS. RITTER: Objection to the
25 form.

1 A. To get -- to get the -- down to
2 the penny, to get the exact same answer? Is
3 that what you're asking?

4 BY MR. SNAPP:

5 Q. I'm asking, to replicate your
6 model, would one have to use the exact same
7 assumptions, yes.

8 A. To replicate our model. I'm
9 just trying to figure out what it means to
10 replicate our model. I mean, to derive the
11 exact same estimates, you would either have
12 to use the exact same assumptions or you
13 would have to use different assumptions that
14 happened to offset each other.

15 For example, you know, if you
16 assume that the population is half the
17 population but the costs are twice as much,
18 multiply them together, you could
19 theoretically get the same estimates.

20 Q. But it's reasonable to assume
21 that an expert looking at your model might
22 make -- reach different conclusions as to
23 certain of the assumptions that you made,
24 correct?

25 A. Yes.

1 Q. And if an expert using your
2 model used different assumptions, unless they
3 were offsetting assumptions, as you pointed
4 out, it's fair to assume that that expert's
5 conclusions would be different than yours,
6 correct?

7 A. Yes. They could be higher.
8 They could be lower.

9 Q. But you agree that another
10 expert evaluating abatement remedies,
11 national abatement remedies, is likely to
12 make at least some different assumptions than
13 the assumptions that you and your team made
14 in the 28 highlighted lines on the screen
15 right now, correct?

16 A. Yes.

17 Q. Did you conduct any analysis of
18 how any changes in these assumptions, the 28
19 highlighted assumptions that are on the
20 screen -- how those changes in assumptions
21 would affect your results?

22 A. Yes.

23 Q. What did you do to analyze how
24 changes in your assumptions would affect the
25 results?

1 A. Well, it depends. I mean,
2 that's hard to talk about in the abstract,
3 because there are 15 different Excel sheets,
4 one for each abatement category.

5 Q. Right. And so have you done
6 any sort of sensitivity analysis to determine
7 what would change?

8 A. Yes.

9 Q. Where would I find that in your
10 spreadsheets?

11 A. Well, for -- for
12 medication-assisted treatment, you would find
13 it in the Markov model.

14 Q. Okay. We'll talk a look at the
15 Markov model some more in a moment.

16 But by the way, some of your
17 other assumptions that I didn't highlight are
18 actually derived from assumed numbers,
19 correct? Let me see if I can find a good
20 example.

21 Let's take a good example here.
22 We've got some in law enforcement. So you
23 have got some here, the stigma reduction
24 training cost per patrol officer is something
25 that you derived based on the numbers above,

1 correct?

2 A. Yes, sir.

3 Q. And so the number of
4 assumptions that are included -- incorporated
5 into your model are actually more than just
6 the 28 I pointed out to you, correct?

7 A. Yes, sir. I mean -- yes, sir.

8 Q. So what I'm talking about is
9 the assumed parameters that you plugged into
10 the model, there are more than just the 28
11 that I highlighted on the screen. There are
12 others that are derived from those
13 highlighted assumed numbers, correct?

14 A. Yes, sir.

15 Q. Okay. If we count those up --
16 I think we counted 52, but we're not going to
17 go through those today.

18 A. Okay.

19 Q. It's 52, the 28 plus 24 would
20 get you to 52, so...

21 So we were looking before we
22 started --

23 MR. SNAPP: We can turn that
24 off. Thank you.

25 ///

1 BY MR. SNAPP:

2 Q. Before we started looking at
3 the spreadsheet we were looking at
4 paragraph 180 and 181 of your report. I
5 think you were reading some language from
6 180.

7 In paragraph 181, you state
8 that your abatement estimate does not address
9 how abatement costs should be shared across
10 different parties; is that correct?

11 A. Yes, sir.

12 Q. And so just to be clear, you
13 haven't attempted to identify and quantify
14 the impact of any alleged wrongdoing by any
15 defendants on opioid-related outcomes and
16 subsequent costs, correct?

17 A. Correct.

18 Q. Does your model assume that the
19 defendants are responsible for all of the
20 abatement costs --

21 A. No, sir.

22 Q. -- that it predicts?

23 Does your model have anything
24 to do with who should pay for what?

25 A. No, sir.

1 Q. Now, if we look at -- staying
2 on the same spreadsheet, if we go up to
3 line 145, this is your research line?

4 A. Can you power up my screen,
5 please?

6 Q. Oh, I'm sorry, yes. Can we
7 have that? Thank you.

8 A. Thank you.

9 Q. If we're looking at the
10 research line, which is 145, I'm going to
11 highlight it in green. It's -- that makes it
12 difficult to read. Sorry. Let's change it
13 to a different color.

14 It's -- your source for your
15 \$1.1 billion research budget is the NIH 2018
16 HEAL Initiative budget. What is that?

17 A. It's a -- I'm sorry, can you
18 please ask the question again.

19 Q. Sure. What is NIH 2018 HEAL
20 Initiative budget?

21 A. Well, I provide a source that
22 describes in further detail the HEAL
23 Initiative.

24 Q. Okay.

25 A. This is a broad-reaching, you

1 know, multi-institute initiative of the
2 National Institutes of Health to reduce
3 morbidity and mortality from the opioid
4 epidemic and to improve pain care through
5 scholarship and discovery, through scientific
6 investigation.

7 Q. Are you aware from the source
8 that you cite there that the \$1.1 billion of
9 funding for the HEAL program already exists
10 through congressional funding?

11 MS. RITTER: Objection,
12 foundation.

13 THE WITNESS: Can you ask that
14 question again, please?

15 MR. SNAPP: Sure.

16 BY MR. SNAPP:

17 Q. Have you -- in the source...
18 (Whereupon, Deposition Exhibit
19 Alexander-10, Press Release, NIH
20 launches HEAL Initiative, was marked
21 for identification.)

22 BY MR. SNAPP:

23 Q. Sir, I'm handing you what's
24 been marked as Exhibit 10 to your deposition.
25 Thank you. And this is a press release from

1 April 4th, 2018 talking about -- the title is
2 NIH launches HEAL Initiative, doubles funding
3 to accelerate scientific solutions to stem
4 national opioid epidemic.

5 Do you see that?

6 A. Uh-huh.

7 Q. You have to answer verbally.

8 Sorry.

9 A. Yes. Yes. I'm sorry.

10 Q. Thank you.

11 And in the first paragraph
12 below the picture, there's a sentence that
13 says: NIH is nearly doubling funding for
14 research on opioid misuse/addiction and pain
15 from approximately 600 million in fiscal year
16 2016 to 1.1 billion in fiscal year 2018, made
17 possible from a funding boost by Congress.

18 Do you see that?

19 A. Yes, sir.

20 Q. So do you have an understanding
21 that the \$1.1 billion that you included as
22 part of your abatement remedy for the NIH
23 2018 HEAL Initiative is actually already
24 fully funded by Congress?

25 A. Yes, sir.

1 Q. And are you going to be giving
2 any testimony if you testify at trial with
3 respect to whether the defendants should pay
4 for that \$1.1 billion in funding?

5 A. Well, I -- once again, I don't
6 know whether I would be testifying in trial,
7 and if so, I would speak to anything that I
8 was asked to speak to.

9 Q. Were you suggesting, sir, by
10 including that number in your analysis, that
11 the defendants should pay for the entirety of
12 this program that's already federally funded?

13 A. I -- my goal was to identify
14 remedies and then to try to provide national
15 estimates for what I thought these would
16 cost.

17 And in some cases, considerable
18 investments may already be being made by any
19 number of parties in some of these
20 categories, and so I wasn't asked nor did I
21 attempt to identify either how responsibility
22 should be shared across parties or how monies
23 should be -- how claims should be made
24 against various parties as a function of how
25 much has already been invested.

1 So I don't know if that answers
2 the question, but I really didn't consider
3 the amount already being invested as I made
4 estimates of what I thought investments would
5 ultimately take.

6 Q. So it's fair to say that you
7 don't think -- you don't have an opinion one
8 way or another whether the defendants should
9 pay for a program that's already been
10 federally funded; is that fair?

11 A. No.

12 Q. That's not fair?

13 A. No. I mean, I have not thought
14 a lot about it, but I don't have a
15 formulated -- at this point, I would want to
16 think more about it. It's a complex
17 question, and I would want to think more
18 about it. It's not something that I was
19 asked to prepare for in this report.

20 Q. Fair enough. And you don't
21 have an opinion on that issue today, correct?

22 A. Correct.

23 Q. Thank you.

24 So I assume, sir, that the same
25 analysis that you just went through in your

1 answer to me would apply with respect to the
2 existence of Ohio's prescription drug
3 monitoring program, correct?

4 A. When you say the same analysis,
5 can you ask the question again?

6 Q. Sure, I'm sorry. I was just
7 trying to shortcut things.

8 A. Of course.

9 Q. Trying to get you out of here.

10 A. Well, I'm not complaining about
11 that, but...

12 Q. So my point is simply that you
13 have not taken into account the costs that
14 the state of Ohio has already incurred in
15 establishing its PDMP or prescription drug
16 monitoring program, as part of your model; is
17 that correct?

18 A. Correct. Correct. My -- in no
19 case did I look at how much is actually being
20 expended and use that to decide how much I
21 thought future abatement costs would be.

22 Q. Fair enough.

23 And in terms of the PDMP that
24 exists in Ohio, is it your understanding that
25 that's a state program or a county program?

1 A. I don't know the details of how
2 it's funded. But I believe -- so if you were
3 asking about funding, I don't know the
4 details, but my understanding is that OARRS
5 is a statewide program.

6 Q. And do you know if it's even
7 possible to have a county-level PDMP in Ohio?

8 A. Well, as I discuss in my
9 report, PDMPs are state-level programs. But
10 I think surveillance is very important, and
11 that's why I discussed that in my report.
12 That is, surveillance at a local level.

13 Q. Now, there are certain programs
14 in your model that you assume will serve a
15 constant population over time, correct?

16 A. Yes, sir.

17 Q. And if we wanted to understand
18 what those are, we could look at your redress
19 model spreadsheet, and we'd look at the trend
20 ratios tab, correct?

21 A. Yes, sir.

22 Q. And this is the one that's
23 called All Redress Models 17 April 19,
24 Version 14. And I can mark that as an
25 exhibit so you can look at it and we'll have

1 it in the record. I'm going to mark it as
2 Deposition Exhibit 11.

3 (Whereupon, Deposition Exhibit
4 Alexander-11, Spreadsheet, Redress
5 Models, was marked for
6 identification.)

7 MR. SNAPP: Here's a copy for
8 Ms. Ritter.

9 THE WITNESS: Thank you.

10 BY MR. SNAPP:

11 Q. If you turn to the second page
12 of the exhibit, or you can look on the
13 screen -- it's the same information either
14 way -- the population stayed constant for
15 item 3, the mass media campaign, correct?

16 A. Yes, sir.

17 Q. And for the academic detailing?

18 A. Yes, sir.

19 Q. And for drug disposal programs?

20 A. Yes, sir.

21 Q. And surveillance?

22 A. Yes.

23 Q. And PDMPs?

24 A. Yes.

25 Q. And research?

1 A. Yes.

2 Q. And law enforcement
3 inventions -- interventions, correct?

4 A. Yes.

5 Q. So why did you assume in your
6 model a constant population for each of these
7 abatement categories?

8 A. Well, you know, this model
9 provides a framework, and my preliminary best
10 estimates, and for some categories I felt
11 that it was important to modify the costs
12 over time based on how the -- based on our
13 best estimations of how the epidemic will
14 unfold. In some cases costs may go up and
15 some down.

16 In other cases I felt that in
17 order to best remedy the epidemic, a constant
18 investment should be made over time.

19 Q. But if abatement efforts are
20 successful, shouldn't the need for these
21 programs reduce over time, these ones that
22 are listed as constant here?

23 A. Well, I mean, we could look at
24 the tabs where we estimate the effects of
25 different abatement interventions, and while

1 overdose deaths with multiple combined
2 interventions could decrease by as much as
3 39.5% we estimate in the models, we're still
4 talking about tens of thousands of
5 individuals dying because of the epidemic,
6 even ten years out.

7 And so the -- so the answer to
8 your question is that even with aggressive
9 intervention, while we believe that these --
10 while I believe that these programs are
11 evidence based and should be implemented, and
12 that's my expertise, nevertheless, for some
13 of these abatement categories, I think
14 constant continuous investment should be
15 made.

16 Q. Including mass media, academic
17 detailing, drug disposal programs,
18 surveillance, PDMPs, research and law
19 enforcement initiatives?

20 A. Yes, sir.

21 Q. For any of these categories,
22 did you do anything -- I'm sorry, let me back
23 up.

24 For your calculations with
25 respect to any of these categories and the

1 national abatement costs within any of these
2 categories, did you calculate a confidence
3 interval for your estimates?

4 A. We -- are you asking about a
5 specific one of these or for any of them?

6 Q. Any of them.

7 A. Okay. In developing these
8 estimates, I examined a number of different
9 assumptions around -- assumptions regarding
10 the components of a given category.

11 So, for example, if we consider
12 the effects of -- if we consider the costs of
13 care required for pregnant women and
14 neonates, so these are women that have opioid
15 use disorder or children born, for example,
16 with opioid use disorder, I examined how the
17 estimates that I provided would vary based on
18 differences in the inputs.

19 So essentially, I did examine
20 how sensitive the final dollar amount was to
21 the assumptions we were making.

22 Q. That's not a true confidence
23 interval, is it?

24 A. No, it is not.

25 Q. And so you did not calculate a

1 confidence interval around your calculations,
2 your abatement cost calculations; is that
3 correct?

4 A. I did not.

5 Q. Now, with respect to these
6 abatement cost interventions that are listed
7 on the sheet that we have on the screen, you
8 would certainly expect the need for a mass
9 media campaign to go down over time, right?

10 A. I am not sure about that.

11 Q. Why not?

12 A. Because as I outline in my
13 report, there are profound misconceptions
14 that have allowed for the epidemic to
15 flourish, and substantial gaps in quality of
16 care for those in pain as well as gaps in
17 care with respect to the use of opioids.

18 So I think this is an epidemic
19 that's been -- depending upon when you define
20 the start, that's been, you know, decades in
21 the making, and I believe that constant
22 investment in a media campaign over the next
23 decade is a reasonable approach.

24 Q. Just focusing on this mass
25 media campaign for a moment -- well, strike

1 that.

2 There's a paragraph in your
3 report that I want to ask you about. I just
4 didn't understand it, so paragraph 181,
5 Deposition Exhibit 1. Second sentence says:
6 In addition, some (e.g., "Medication Assisted
7 Treatment"), but not all, of my estimates
8 exclude costs arising from individuals with
9 heroin use disorders without prior
10 prescription opioid use.

11 Can you explain what you mean
12 by that?

13 A. One of the improvements that I
14 believe is reflected in our model that has
15 not been reflected in prior Markov models of
16 the opioid epidemic is that we separately
17 account for a population, the minority of
18 individuals that have heroin use that have
19 not had prior prescription opioid use
20 preceding the heroin use.

21 And in our estimates of the
22 costs of treatment that we reviewed in
23 Scenarios B, C and D, we exclude the costs of
24 treatment for individuals using heroin whose
25 heroin use did not start with prescription

1 opioids. In other words, we provide
2 conservative estimates that exclude the
3 population of users of heroin that didn't
4 start with prescription opioids.

5 Q. Did you do anything to exclude
6 heroin users who started with nonmedical use
7 of opioids?

8 A. I would have to review the
9 source documentation for the specific
10 questions that we used from the data sources
11 that we used, such as NSDUH, in order to
12 understand -- in order to be able to answer
13 that question accurately.

14 Q. Because when we started out
15 today looking at one of your -- we were
16 actually looking at this cover sheet --
17 actually, I'm sorry, wrong model. We were
18 looking at the concept sheet of your
19 MAT Model 2.0 version 51. We talked about
20 the fact that you can't go from the general
21 population to nonmedical use of opioids.

22 But did you exclude from your
23 model heroin users who went directly from the
24 general population to the nonmedical use of
25 opioids without the interim step of a medical

1 use of opioids?

2 MS. RITTER: Objection, form,
3 foundation.

4 THE WITNESS: Can you ask that
5 again, please?

6 MR. SNAPP: Not easily, but I
7 will try.

8 BY MR. SNAPP:

9 Q. Does your model exclude heroin
10 users who had previous nonmedical use of
11 opioids but did not previously have medical
12 use of opioids?

13 A. I don't think that we
14 differentiate. I don't believe so.

15 Q. So I want to go back to a
16 different sheet here, which has been -- I
17 want to go back to the --

18 MR. SNAPP: Well, let's just --
19 we can take the screen off, please.

20 BY MR. SNAPP:

21 Q. I want to go back to what's
22 been marked as Deposition Exhibit 3, okay?

23 A. Yes, sir.

24 Q. That's the amendment that we
25 received on April 17.

1 A. Yes, sir.

2 Q. Here you decreased -- I want to
3 focus specifically on criminal justice
4 interventions on the first page. You
5 decreased your drug court population
6 parameter from 250,000 to 120,000; is that
7 correct?

8 A. Yes, sir.

9 Q. Was that just based on a change
10 in the data that you were relying on?

11 A. It was -- as with all of these
12 changes, they were based on my review of the
13 information and belief that, you know, this
14 was an area where I felt that there were --
15 there was a more conservative assumption that
16 could be made.

17 Q. Okay.

18 A. And thus, I implemented that.

19 Q. And it looks like you cited --
20 I'm putting on the screen right now -- if we
21 can put the screen on, please -- the White
22 House report as a source for that 120,000.
23 That was the -- what you referred to as the
24 Christie Commission report; is that correct?

25 A. No, sir.

1 Q. What is this one then? I'm
2 sorry.

3 A. I believe this was a separate
4 source document from the Christie Commission
5 report.

6 Q. Oh, I see. You're right. This
7 is a fact sheet from ONDCP, correct. Okay.

8 And do you have an
9 understanding of the drug court population,
10 that includes people who are there because of
11 use of all different kinds of drugs, right?

12 A. Yes, sir.

13 Q. Not just opioids?

14 A. No, sir.

15 Q. So it could include people who
16 were there because of their use of cocaine?

17 A. Yes, sir, I believe so.

18 Q. Methamphetamine?

19 A. Yes, sir.

20 Q. Alcohol?

21 A. Yes, sir.

22 Q. And yet you used the total drug
23 court population in your model, correct?

24 A. I -- I would have to go back
25 and review the source documentation in order

1 to, you know, provide more information on
2 this estimate.

3 Q. You didn't do that before
4 today?

5 A. I -- I'm sorry, can you ask the
6 question again, please?

7 Q. Did you go back and look at
8 your sources to make sure that these were
9 accurate and to make sure that you understood
10 them before coming in to testify today?

11 A. Well, I did review a lot of
12 information in preparation for today, but I
13 did not review every reference within my
14 report and within each of these source
15 documents.

16 Q. Would you agree that if you
17 included in your numbers the entire drug
18 court population, including those who were in
19 drug court because of their use of cocaine,
20 methamphetamine, alcohol, any number of other
21 drugs, you would be overinclusive in your
22 numbers, correct?

23 Would you agree with that?

24 A. Well, you know, the needs for
25 drug court could be -- I would have to review

1 the documents, but, you know, I think that
2 some of the information that I included in my
3 report suggests that there are enormous
4 opportunities for expanding drug courts and
5 processing many more people that ultimately
6 are tried and processed and convicted through
7 the nondrug court system into the drug court
8 system.

9 So, you know, my point is this,
10 that this -- that I provided this as an
11 addition -- as an initial framework to
12 develop preliminary estimates and that my
13 hope is that it can be used by the courts
14 to -- you know, to -- as a starting point for
15 this process.

16 Q. But if this 120,000 drug court
17 population includes nonopioid users, you
18 would agree that as an abatement remedy for
19 the opioid crisis or epidemic, that number
20 would be overinclusive, right?

21 A. It would be helpful for me to
22 see the source in order to review it
23 carefully, in order to understand the degree
24 to which -- in order to understand the
25 population that this is referring to.

1 Q. I understand that, but I'm just
2 asking: If that were the case, you would
3 agree that your model is overestimating the
4 costs of abatement for the opioid crisis,
5 correct?

6 MS. RITTER: Objection, asked
7 and answered.

8 A. Yes. Yes, if this was -- if
9 the 120,000 figure was the figure for the
10 total number of individuals that -- that
11 because of this document could be served by
12 drug courts and it includes a lot of
13 nonopioid-related crimes, then I would agree
14 that that may represent an overestimate.

15 (Whereupon, Deposition Exhibit
16 Alexander-12, 2011 Huddleston et al
17 NDIC Publication, was marked for
18 identification.)

19 BY MR. SNAPP:

20 Q. Sir, I'm handing you what's
21 been marked as Exhibit 12. This is one of
22 the sources that you cited in your report.

23 Do you recognize this document?

24 A. I believe so.

25 Q. Okay. So I just want to direct

1 your attention to page 31 of this document.

2 If you look at the right-hand side there,
3 there's some numbers. It says: Cocaine or
4 crack, 27%; alcohol, 27%; cannabis, 22%; and
5 methamphetamine, 16% were reported to be the
6 primary substances of abuse among
7 participants in urban drug courts.

8 Did I read that correctly, sir?

9 A. I'm sorry, where were you
10 reading? I was looking at other information.

11 Q. The right-hand column, very
12 top.

13 A. Okay. Yes, sir.

14 Q. Cocaine/crack, 27%; alcohol,
15 27%; cannabis, 22%; and methamphetamines, 16%
16 were reported to be primary substances of
17 abuse among participants in urban drug
18 courts.

19 Did I read that correctly, sir?

20 A. Yes, sir.

21 Q. Then next it talks about
22 suburban drug courts, and it says: Alcohol,
23 33%; cannabis, 20%; cocaine/crack, 18%; and
24 methamphetamine, 18% were reported to be the
25 primary substances of abuse among

1 participants in suburban drug courts.

2 Do you see that?

3 A. Tell me again where that is,
4 I'm sorry.

5 Q. I'm sorry, sir. Right here in
6 the middle.

7 A. Yes, sir. Yes, sir.

8 Q. And right below that is the
9 first time there's a mention of any opioid,
10 and it says: Methamphetamine, 30%; alcohol,
11 30%; cannabis, 14%; and heroin, 12% were
12 reported to be the primary substances of
13 abuse among participants in rural drug
14 courts; is that correct?

15 A. Yes, sir.

16 Q. And do you dispute those
17 numbers?

18 A. I don't, but, I mean, I have --
19 you know, there's a lot of information that I
20 would want to carefully consider in
21 evaluating how informative that is in
22 effecting the estimates that I've provided.

23 For example, I don't know if
24 this was done in 2008, but I see at the
25 bottom of page 31 a note about 2008. This

1 also -- the sampling method makes a big
2 difference in terms of the ways that
3 individuals were sampled. And lastly, this
4 may be examining current participants rather
5 than the opportunities for future use. And
6 my abatement plan is forward-looking. It's
7 not looking back. It's looking forward.

8 So I don't -- so while this
9 information is helpful, it would only be one
10 of many pieces of information that I would
11 rely on to derive an estimate regarding the
12 number of people that would be appropriate
13 for drug court.

14 Q. Well, wouldn't it be more
15 reliable if your model looked at just those
16 in drug courts, the drug court population
17 that was there because of prescription opioid
18 use?

19 MS. RITTER: Objection, form.

20 THE WITNESS: Can you ask that
21 again, please?

22 BY MR. SNAPP:

23 Q. Sure.

24 I'm just trying to understand
25 if your model would be more reliable if it

1 included, rather than the entire drug court
2 population that includes all these other
3 drugs, it only included those who were there
4 for prescription opioid use.

5 MS. RITTER: Objection, form,
6 foundation. That's not what he said.

7 MR. SNAPP: Let's broaden it.

8 BY MR. SNAPP:

9 Q. Let me just broaden it.
10 Wouldn't your model be more
11 reliable, sir, if it focused only on the drug
12 court population that was in drug court
13 because of opioid use?

14 MS. RITTER: Objection, form.

15 A. My goal is in identifying
16 national needs, and specifically with respect
17 to drug courts, I think that these should be
18 forward looking and based not just on the
19 number of current utilizers that have
20 opioid-related encounters with the criminal
21 justice system, but also the number that --
22 the unmet need and the unfulfilled need.

23 So I think that's very
24 important, and I do note here this -- on
25 page 27, it appears to me that these data

1 were derived from 2008, and, of course,
2 there's been enormous changes since 2008 in
3 terms of morbidity and mortality from the
4 epidemic.

5 But --

6 MR. SNAPP: Can we get the
7 screen again, please.

8 BY MR. SNAPP:

9 Q. So is it your testimony, sir,
10 that this number, this 120,000 drug court
11 population, is exclusively people who are in
12 drug court because they used opioids?

13 A. No, it is not.

14 Q. And your model would be more
15 reliable in addressing the opioid issues that
16 arise from the opioid epidemic if it were
17 focused solely on a drug court population of
18 opioid users, correct?

19 MS. RITTER: Objection to form,
20 foundation.

21 THE WITNESS: Can you ask that
22 again, please?

23 MR. SNAPP: Certainly.

24 BY MR. SNAPP:

25 Q. Your model, in terms of its

1 criminal justice intervention abatement cost
2 calculations, would be more reliable if the
3 drug court population that you were focused
4 on was only the drug court population that
5 was in drug court because of the use of
6 opioids?

7 MS. RITTER: Same objection,
8 form, foundation.

9 A. Yeah. What I would say is that
10 the population that I think abatement
11 estimates should be built on for this
12 category is the population that are either
13 currently in drug courts because of
14 opioid-related crimes or encounters with the
15 criminal justice system, or the population
16 where there's unmet need and where drug court
17 should be expanded.

18 And it may be that that latter
19 group is an enormous population. I think
20 that I would want to look at this and other
21 documentation in order to be able to provide
22 the courts with additional information about
23 that.

24 BY MR. SNAPP:

25 Q. Understood.

1 Just so we're clear, though,
2 you have not attempted to segregate out the
3 drug court population that's in drug court
4 because of the use of opioids, correct?

5 MS. RITTER: Objection, form,
6 foundation.

7 A. It would be helpful for me to
8 see the source documentation associated with
9 this estimate of 120,000 in order to be able
10 to answer that question.

11 BY MR. SNAPP:

12 Q. So you don't know if you have
13 or not?

14 A. In order to be able to be -- to
15 answer that question as precisely as
16 possible, it would be helpful to see the
17 source documentation.

18 Q. So is the answer to my
19 question, yes, you don't know?

20 MS. RITTER: Objection, asked
21 and answered.

22 MR. ARNOLD: He said if you
23 would provide the source document --

24 MR. ALEXANDER: You can't have
25 two people objecting at once.

1 MS. RITTER: He's asking -- he
2 wasn't objecting. He was asking a
3 question. He's just asking a
4 question.

5 MR. SNAPP: He has two -- three
6 lawyers sitting to his left who can
7 provide him the source document, or he
8 has nine different team members back
9 at the shop who can provide him the
10 source document. I don't have it.

11 MS. RITTER: Well, I didn't
12 think that I should be handing him
13 documents during your questioning. If
14 you're suggesting I should, I could
15 think about that. But all -- I don't
16 even remember what the question is
17 because I feel like it had been asked
18 like three times.

19 But go ahead if you want to --
20 maybe the court -- I don't even know
21 where we were. Do you want him to ask
22 the question again?

23 MR. SNAPP: No.

24 MS. RITTER: We're finished
25 with that question? Okay.

1 BY MR. SNAPP:

2 Q. So, sir, I understand you want
3 to look at the source document for your
4 120,000 number, correct?

5 A. It would be helpful for me to
6 see that if -- if we were to discuss that
7 value in more detail, yes.

8 MR. SNAPP: All right. Let's
9 take a break.

10 THE VIDEOGRAPHER: Going off
11 the record, 2:34.

12 (Recess taken, 2:34 p.m. to
13 2:55 p.m.)

14 THE VIDEOGRAPHER: We're back
15 on the record at 2:55 p.m.

16 (Whereupon, Deposition Exhibit
17 Alexander-13, Office of National Drug
18 Control Policy Webpage, was marked for
19 identification.)

20 BY MR. SNAPP:

21 Q. Dr. Alexander, I'm handing you
22 what we've identified as the source for your
23 120,000 drug court population number in your
24 model. Just let me know when you've had a
25 chance to look at it.

1 MR. SNAPP: Oh, I'm sorry, I
2 didn't give you a copy. I'm sorry.

3 Just for the record, I've
4 marked it as Exhibit 13.

5 (Document review.)

6 A. Thank you.

7 BY MR. SNAPP:

8 Q. Now, does this document, sir,
9 clarify for you what's included in the
10 120,000 that you used as the drug court
11 population?

12 A. It does.

13 Q. And what is it? What is that
14 number?

15 A. Well, the -- both the
16 Exhibit 12 and Exhibit 13 are remarkably
17 consistent in identifying that about half of
18 counties in the United States don't have a
19 drug court.

20 Q. Okay.

21 A. And I also note in Exhibit 12
22 that the data are from 2008, and so I do see
23 the estimate of 120,000 Americans annually
24 that --

25 Q. In drug courts, correct?

1 A. Correct. Correct.

2 Q. So that's not -- I'm sorry. Go
3 ahead. I don't mean to talk over you, sir.

4 A. So I think that would
5 represent -- if we think that that represents
6 half of the counties, that's the current
7 volume of participants in drug courts in half
8 of the counties in the United States.

9 So even without assuming
10 something about unmet need, of which I think
11 in many communities there's large amounts of
12 unmet need, it would suggest that if there
13 were drug courts in the entire United States,
14 assuming that these 50% where the drug courts
15 are currently present are representative of
16 the counties where they're not, that the drug
17 court population could be currently as high
18 as 240 without any scaling of that 240,000.

19 Q. Assuming that's correct, only
20 some subset of that population, even your
21 assumed population --

22 A. Yeah.

23 Q. -- would actually be in drug
24 court due to opioid use, correct?

25 A. That's correct.

1 Q. And so you have done no
2 calculations to determine what percentage of
3 your 120,000 drug court population is
4 actually in drug court as a result of using
5 opioids; is that correct?

6 MS. RITTER: Objection, form.

7 A. Well, if we use the numbers
8 from this report and we assume that if there
9 are 120,000 in drug courts in half of the
10 counties because half of the counties don't
11 have them, and so we double that to assume
12 that if every county had them and they were
13 operating at the same capacity, we'd have
14 about 240,000, then our estimate of 120 would
15 represent that -- an assumption that about
16 half of current -- current drug court
17 participants are utilizing the drug courts
18 because of opioid-related offenses.

19 BY MR. SNAPP:

20 Q. But that's not what you did in
21 your model, right?

22 A. Well, we have in our model an
23 estimate, and the estimate was derived from
24 this source documentation.

25 Q. But you have no -- no source

1 for an estimate that half of the participants
2 in drug court are there because of the use of
3 opioids.

4 A. I don't have a precise source
5 to provide you to support that assumption.

6 Q. You don't have any source to
7 support that assumption, do you?

8 A. Well, as I noted before, there
9 were four categories of -- there were four
10 sources, ultimately, of information, at
11 least, that I used to derive the estimates
12 that I've provided, these preliminary
13 estimates and this framework, and so -- but I
14 can't identify specific -- you know, there
15 are no further written sources that I
16 provided of peer-reviewed publications or
17 other publications.

18 Q. Those four sources were
19 judgment, your experience, your review of
20 scientific literature, and the experience of
21 your team members, correct?

22 A. Yes.

23 Q. And you can't point to any one
24 of those that tell me that -- what percentage
25 of this 120,000 drug court population can be

1 attributed to those in drug court because of
2 opioids?

3 A. The 120,000 is our -- the
4 120,000 is my estimation of the population
5 that could be served because of
6 opioid-related crimes in a national abatement
7 model.

8 Q. With drug courts in every
9 county in the United States, correct?

10 A. Well, I mean...

11 Q. Maybe I'm misunderstanding your
12 testimony. Is that what you testified to a
13 few minutes ago?

14 A. The estimates that I provide
15 for -- the 120,000 is my best current
16 estimate of the number of individuals that
17 could be served for -- through drug courts
18 for opioid-related morbidity in the United
19 States.

20 Q. Existing drug courts or drug
21 courts in every county?

22 MS. RITTER: Objection, form.

23 A. I don't address that in my --
24 you know, in my report.

25 ///

1 BY MR. SNAPP:

2 Q. I'm just trying to understand
3 where we are here on this drug court
4 population issue.

5 A. Sure. Sure. I mean, I think
6 that looking at historic data is of value and
7 important, but there's also a large unmet
8 need, as I discuss in my report.

9 Q. But the source that you cited
10 for 120,000 is the one that you have in front
11 of you as Exhibit 13, and it identifies
12 120,000 Americans who actually received the
13 help they need through drug court, right?

14 A. In half of the county -- with
15 half of the counties being served.

16 Q. Okay. But you didn't say
17 anything in your report about providing an
18 abatement plan that covers all of the
19 counties in the U.S., right? You just used
20 the 120,000, which is the current population
21 of drug courts?

22 A. But the -- I guess my point is
23 this, that the 120,000 was based on this
24 estimate and knowledge that they were
25 operative in half of the counties in the

1 United States.

2 Q. Okay. Sir, is it fair to say
3 that your model does not include abatement
4 estimates -- estimates of abatement costs for
5 trying to stop the supply of the illegal and
6 illicit opioids coming into the country?

7 A. No.

8 Q. It does not include those,
9 correct?

10 A. No, I do not believe that it's
11 fair to state that.

12 Q. How does your model include
13 abatement costs for trying to stop the supply
14 of illegal and illicit opioids coming into
15 the country?

16 A. One of the abatement categories
17 that I call for and suggest for the courts to
18 carefully consider is expansion of law
19 enforcement, and that law enforcement
20 capacity-building will including addressing
21 the areas that you identify.

22 Q. Well...

23 MR. SNAPP: Could we turn on my
24 screen, please?

25 ///

1 BY MR. SNAPP:

2 Q. If we look at the law
3 enforcement categories, the law enforcement
4 parameters that you've included, which we
5 have on the screen right now, and these are
6 part of Exhibit 8, if you look at the law
7 enforcement parameters, none of these address
8 national efforts to prevent supply of illegal
9 or illicit opioids coming into the country,
10 do they?

11 A. Well, in my report, I discuss
12 the role of the DEA, but I -- that is not the
13 focus of my report. Within the law
14 enforcement category, I do discuss
15 specialized overdose units.

16 So whether or not you frame
17 that as addressing a national effort, one of
18 the roles of these overdose units is to track
19 down and disrupt supply chain of illicit
20 opioids.

21 Q. But your entire law enforcement
22 category is focused on police and sheriffs'
23 departments in the U.S., not on federal
24 efforts to stop the flow of drugs across the
25 borders, correct?

1 A. No, that's not correct.

2 Q. Where in your law enforcement
3 parameters that are on the screen right now
4 do you include any cost for federal funding?

5 A. I'm sorry, I should have asked
6 for you to please ask the sentence again, but
7 it felt like you were asking two separate
8 questions, because I believe you began by
9 stating that our entire -- that my entire law
10 enforcement category is focused on police and
11 sheriffs, and that's what I was noting was
12 incorrect.

13 Q. Which of the categories on the
14 screen right now in lines 146 through 165
15 have anything to do with other than a local
16 police or sheriff department?

17 A. So I'm sorry, I'm thinking of
18 the -- my report and what I include in my
19 discussion of law enforcement, which
20 includes, very importantly, ramping up
21 treatment within the criminal justice system.

22 So the entire criminal justice
23 system, including jails and prisons and
24 detention facilities, is an important
25 component of the law enforcement abatement

1 remedy that I propose, though not included in
2 this line item budget.

3 Q. And again, those costs with
4 respect to incarceration-related costs don't
5 actually address the issue of trying to stop
6 the supply of illegal or illicit opioids
7 coming across the border into this country,
8 do they?

9 A. That's true, they do not.

10 Q. Sir, I want to shift gears a
11 little bit and talk about the inflation rate
12 that you used, and I'm going to pull that up
13 in a different one of your documents. It's
14 the All Redress Models 17 April 19, Version
15 14 spreadsheet that's on the screen now.

16 And we're on the cover sheet
17 where you include the inflation rate that you
18 applied to all aspects of your model,
19 correct?

20 A. Yes, sir.

21 Q. And you -- it's Exhibit 11, for
22 the record.

23 And you used a five-year
24 average of 3.24%, correct?

25 A. Yes, sir.

1 Q. I noticed you have your phone
2 there. Can you just tell me: If you do an
3 average of any five of the numbers on the
4 screen right now, does it actually come out
5 to 3.24%?

6 MS. RITTER: You mean me? Oh,
7 him.

8 BY MR. SNAPP:

9 Q. Yeah. You can use the
10 calculator on your phone if you want to do
11 the addition -- do the calculations.

12 A. I would have -- I mean, if you
13 know the answer, then I'm happy to hear from
14 you whether or not that's the case.

15 Q. Okay. Well, it doesn't.

16 A. Okay.

17 Q. It doesn't equal 3.24%.

18 So if you actually look at
19 years 2013 through 2017, the average is 2.7%.
20 This is just the simple math of using the
21 numbers on your screen here.

22 A. Okay.

23 Q. Which we've tied back to the
24 source that you cite there.

25 And if you include 2014 to

1 2018, which is five years, the average is
2 2.8%.

3 A. Okay.

4 Q. Do you have any reason to
5 dispute the math that we did?

6 A. No, I do not.

7 Q. Okay. Do you know how you came
8 up with a 3.24% five-year average?

9 A. I do not.

10 Q. And so is it fair to say
11 that -- you can see I just clicked on that,
12 and there's no calculation there, there's no
13 formula up in the formula bar. It's just an
14 entered number, 3.24.

15 A. Uh-huh.

16 Q. And so is it fair to say that
17 if the inflation rate you used was actually
18 2.8 or 2.7% instead of 3.24%, your total
19 abatement cost estimates would be much lower?

20 A. I believe they could be. And,
21 you know, this was -- I don't -- I can't tell
22 you with confidence the basis for what sounds
23 like, you know, a discrepancy between the
24 average that's provided and the values that
25 are there.

1 I would want to go back and
2 look at that carefully and consult with some
3 of the individuals who worked with me to
4 derive these estimates. It may have been
5 that I previously had relied on another
6 source to derive the estimates of inflation.
7 We also previously had considered a discount
8 rate.

9 So there were a number of
10 different approaches that were taken, and my
11 guess is that in that process, this -- this
12 discrepancy occurred.

13 Q. But if you used a 2.7 or 2.8%
14 inflation rate, your results would be
15 dramatically different than they are,
16 correct?

17 A. I would want to look at that.
18 I mean, that's a very straightforward
19 calculation to examine the impact of.

20 Q. And you'd agree that the fact
21 that the inflation rate that you used is not
22 supported by the data that you cite calls
23 into question the reliability of the
24 calculations that you derived from that
25 calculation, correct?

1 MS. RITTER: Objection, form.

2 THE WITNESS: Can you ask that
3 again, please?

4 MR. SNAPP: Sure.

5 BY MR. SNAPP:

6 Q. You'd agree with the fact that
7 you used an interest rate -- I'm sorry, an
8 inflation rate that is significantly
9 different than the actual data that you used
10 to underlie it calls into question the
11 reliability of your entire model?

12 A. I mean, I believe that the
13 model represents my current best estimates
14 regarding the costs of abating the epidemic,
15 and these costs are informed by -- you know,
16 by the estimates that we make about how the
17 epidemic will evolve over time.

18 So I would want to go back, and
19 as I said, I would want to look again and
20 look at this carefully and try to understand
21 the basis for why this is present.

22 Q. Do you have an understanding of
23 the basis for using the medical care CPI as
24 opposed to some other Bureau of Labor
25 statistic CPI?

1 A. No, I do not.

2 Q. Sir, do you know the components
3 of the medical care CPI? Are you familiar
4 with those?

5 A. No, I do not.

6 Q. Did you look at that as part of
7 your work in this case to decide whether it
8 was appropriate and valid to use the medical
9 care CPI as the basis of your inflation rate
10 calculations?

11 A. I believe there were
12 discussions between multiple parties
13 regarding the most appropriate discount rate
14 or inflation rate or -- to use, and
15 ultimately, this was the rate that we decided
16 to use, and I believe there may have been
17 some consultation with other parties about
18 this.

19 Q. Well, what other -- are these
20 parties within your group that you identified
21 before, the nine people that helped you
22 work -- put together your report, or were
23 there other parties outside?

24 A. No, there were no other parties
25 beyond those that I've identified and

1 counsel.

2 (Whereupon, Deposition Exhibit
3 Alexander-14, Consumer Price Index
4 Webpage, was marked for
5 identification.)

6 BY MR. SNAPP:

7 Q. So I'm going to hand you what's
8 a printout from the Bureau of Labor
9 Statistics website related to measuring price
10 change in a CPI, medical care.

11 I just want to point out, on
12 the second page of this document, there's a
13 table that lists the components of the
14 medical care CPI.

15 Do you see that?

16 A. Table A?

17 Q. Yes, sir.

18 Do you see that?

19 A. Yes, I do.

20 Q. And you'll see partway down the
21 page that the medical care CPI includes
22 dental services?

23 You see that on the left-hand
24 column, B.1.b., dental services is included
25 in the medical care CPI?

1 A. Yes, I see that.

2 Q. And immediately underneath that
3 is eyeglasses and eye care; is that correct?

4 A. Yes.

5 Q. And the last two components of
6 the medical care CPI are nursing home and
7 adult daycare services and care of invalids,
8 elderly and convalescents in the home,
9 correct?

10 A. I'm sorry, where are you
11 pointing?

12 Q. The same table.

13 A. Yeah.

14 Q. The last two, nursing home and
15 adult daycare services --

16 A. Yeah.

17 Q. -- which includes things such
18 as adult daycare?

19 A. Yeah.

20 Q. And then on the bottom, care of
21 invalids, elderly and convalescents in the
22 home, and that includes things such as food
23 preparation, bathing, light housecleaning; is
24 that correct, sir?

25 A. Yes, sir.

1 Q. And so do you agree, sir, that
2 the medical care CPI calculation includes a
3 number of services that would not be part of
4 your abatement remedies?

5 A. Well, the -- may I look at this
6 document for a few more minutes?

7 Q. We can go off the record and
8 you can look at it, sure.

9 MS. RITTER: Okay.

10 A. Well, I don't -- what do you
11 mean by off the record? Just take a break?
12 BY MR. SNAPP:

13 Q. So it's not counting against my
14 time.

15 A. Oh, no, no, that's fine then,
16 we don't have to do that. Can you ask the
17 question again, please?

18 Q. Do you agree, sir, that the
19 medical care CPI calculation includes a
20 number of services that would not be part of
21 your abatement remedies?

22 A. I do.

23 Q. Did you consider using any
24 other measure of CPI from the Bureau of Labor
25 Statistics?

1 A. Once again, the decision about
2 which inflation rate to use and how it should
3 be applied I believe was made based on the
4 expertise and the input of members of my team
5 as well as conversations with counsel and
6 perhaps others involved in the litigation.

7 Q. Did you consider using any
8 other CPI measures?

9 A. I believe that several may have
10 been considered, and it's a -- so I believe
11 that several may have been considered.

12 Q. Did you consider, sir, using
13 the U.S. City All Urban Consumers CPI.

14 A. I don't know -- I don't know
15 which indices were evaluated and so -- I
16 don't know which indices were evaluated.

17 Q. So you don't know if you
18 considered the All Items CPI for all U.S.
19 cities?

20 A. When you say "you," are you
21 referring to the team that I supervised as
22 well as the others that were involved in this
23 process?

24 Q. Sir, you've said a number of
25 times that this is your report and you're

1 responsible for the report, so I'm talking
2 about you.

3 A. Okay.

4 Q. And you supervised the team, so
5 I'm asking: Did you consider using any other
6 alternative measures of the inflation rate
7 using other CPI indices?

8 A. I believe we did.

9 Q. And did you include -- in your
10 analysis, did you consider using the All
11 Items U.S. CPI from the Bureau of Labor
12 Statistics?

13 A. I don't recall.

14 Q. Are you aware that there are
15 CPI statistics for the Midwest, which include
16 Ohio, available? You're aware that those
17 statistics are available, right?

18 A. I'm sorry, can you ask the
19 question again?

20 Q. Let me back up, sir.

21 Have you used Bureau of Labor
22 Statistics inflation rates in any of your
23 other work?

24 A. I do not believe so.

25 Q. And is it fair to say that you

1 relied on your team to decide which CPI
2 number to use in this context, and the
3 lawyers involved?

4 A. Yes, it is.

5 Q. Do you know if they considered
6 using -- if your team and the lawyers
7 considered using the Cleveland/Akron all item
8 CPI data from the Bureau of Labor Statistics?

9 A. I don't know, but I'm not sure
10 that I would have suggested such, because my
11 report focuses on developing a national
12 abatement plan, and I've left it to other
13 experts to develop plans specific to Cuyahoga
14 and Summit Counties.

15 So in developing my national
16 estimates, I don't know that I would be
17 comfortable or advise using one
18 jurisdiction's inflation factor over
19 another's.

20 Q. Okay. But even in your -- in
21 your 15 categories, many of these categories
22 that are on the screen right now do not
23 relate to medical care, correct?

24 A. That's correct.

25 Q. And yet, your team and the

1 lawyers decided to use a medical care
2 inflation rate to inflate all of the numbers
3 in your model forward for ten years, correct?

4 A. For these preliminary national
5 estimates, yes, that's correct.

6 Q. So, for example, the mass media
7 campaign was inflated using a 3.24% inflation
8 rate per year even though the mass media
9 campaign is not a medical care cost, correct?

10 A. Yes, that's correct.

11 Q. And the same would be true with
12 respect to the academic detailing and the
13 drug disposal programs and the law
14 enforcement interventions, the PDMPs,
15 correct?

16 A. Yes, sir.

17 Q. Now, if you had considered --
18 if you had used the U.S. All Items CPI, I can
19 show you the -- I'll mark as Exhibit 16 [sic]
20 the spreadsheet that we pulled from the
21 Bureau of Labor Statistics. This is
22 Exhibit 15.

23 (Whereupon, Deposition Exhibit
24 Alexander-15, Consumer Price Index
25 Spreadsheet, was marked for

1 identification.)

2 BY MR. SNAPP:

3 Q. Exhibit 15. And you're welcome
4 to do the math, but if you take years 2013 to
5 2017, the average inflation rate for all
6 items in the U.S. for all urban consumers is
7 2 -- I'm sorry, 1.3%. And if you did a
8 five-year average from 2014 to 2018, the
9 average is 1.5%.

10 Now, would you agree that using
11 the all items, all urban consumers U.S. city
12 average would be more accurate and reliable
13 than using the medical care CPI that we
14 looked at earlier?

15 MS. RITTER: Objection, form.

16 THE WITNESS: Can you ask that
17 again, please?

18 MR. SNAPP: Sure.

19 BY MR. SNAPP:

20 Q. I'm just trying to understand
21 if you agree that using an All Items CPI,
22 given the fact that many of your
23 interventions are not medical care related,
24 would be more reliable as an inflation rate
25 estimate for your model than the medical care

1 inflation rate?

2 A. Well, I'd want to think about
3 that further and consider what the arguments
4 would be. You know, I'd want to think about
5 that further. Some of these categories are
6 more closely aligned with medical care than
7 others, and, you know, I'd want to think
8 about that.

9 Q. But you haven't done that
10 analysis for today, right?

11 A. Are you asking whether I've
12 included it in the submitted materials?

13 Q. I'm just asking if you have
14 considered, yourself, any other inflation
15 rate possibilities, possible measures of
16 inflation rate, sitting here today.

17 MS. RITTER: Objection. I
18 think that was asked and answered.

19 A. I believe -- yeah, I believe I
20 noted that -- I believe that we considered a
21 number of different approaches for managing
22 issues of discounting costs or inflating
23 costs.

24 BY MR. SNAPP:

25 Q. Understood.

1 But you don't know why you
2 chose the medical care over any other
3 measure, correct?

4 A. I think, as I said, this was
5 based on discussions among members of my team
6 and counsel and involved considerations of,
7 you know, the most consistent and appropriate
8 rate to use, but I don't recall the specific
9 conversations and ultimate decision about
10 that.

11 Q. Sir, can you tell me which
12 other components of your model were subject
13 to counsel's input as to the parameters that
14 you used?

15 A. Well, really --

16 MS. RITTER: Objection. I
17 mean, you're asking him to list the
18 categories because we would have to
19 object to privilege for any
20 conversation, content of conversation.

21 So I don't -- I mean, I would
22 object to your trying to inquire into
23 conversations that he had with
24 counsel.

25 MR. SNAPP: No, I'm not asking

1 about the substance of the
2 conversation. I'm asking about which
3 of the other categories are not truly
4 just his work, but ones that counsel
5 weighed in on, as they did with the
6 inflation rate, which he just
7 testified to twice or three times.

8 MS. RITTER: Objection to form,
9 that's not what he testified to.
10 Foundation.

11 MR. SNAPP: I believe he --

12 BY MR. SNAPP:

13 Q. Did you not -- sir, did you
14 testify that --

15 MS. RITTER: It wasn't a
16 category. That was the inflation
17 rate.

18 MR. SNAPP: Are you done?

19 MS. RITTER: Yes.

20 BY MR. SNAPP:

21 Q. Sir, did you testify just a few
22 minutes ago that the inflation rate that you
23 selected for use in your model was selected
24 as a result of conversations among your team
25 and counsel?

1 MS. RITTER: Objection, asked
2 and answered.

3 A. Yes.

4 BY MR. SNAPP:

5 Q. Were there other categories of
6 information that were chose -- particular
7 parameters were chosen based on conversations
8 among your team and counsel?

9 A. No. And this wasn't an
10 abatement category. This was a method of
11 managing inflation over time.

12 Q. But it had a material impact on
13 the final numbers of your model, correct?

14 A. Yes.

15 Q. The selection of the inflation
16 rate could change the model by hundreds of
17 millions, if not billions, of dollars on a
18 national level, correct?

19 A. I would have to look at the
20 numbers, but I would agree that it could have
21 a material impact.

22 Q. Sir, in your April 3rd report
23 that's been marked as Deposition Exhibit 3,
24 in Exhibit -- I think it was paragraph 180
25 that we looked at previously -- I think you

1 have it in front of you there, but I'm not
2 sure.

3 MS. RITTER: Which exhibit
4 number? I'm lost.

5 THE WITNESS: It would be
6 Exhibit 1 or 2, I believe.

7 MR. SNAPP: Exhibit 1. It's
8 Exhibit 1.

9 THE WITNESS: Okay.

10 BY MR. SNAPP:

11 Q. In paragraph 180 -- and we
12 talked about this briefly before. You used a
13 percentage of 1.5% to try to map nationwide
14 cost to Cuyahoga County and Summit County; is
15 that correct?

16 A. Yes, sir.

17 Q. And as I understand your
18 testimony earlier today, I'm just trying to
19 understand whether I need to go into that
20 1.5% --

21 A. Yeah.

22 Q. -- or if you've abandoned that
23 1.5% attempt to map to Cuyahoga and Summit.

24 Because I think what you told
25 me earlier was that in Exhibit 3, which was

1 the April 17th amendments to the supplement,
2 you didn't do any calculation to try to
3 attribute certain percentage of your
4 Scenarios A, B, C, and D to Cuyahoga and
5 Summit.

6 So do you intend to, at any
7 time in this case, try to attribute some
8 portion of your national estimates to
9 Cuyahoga and Summit?

10 MS. RITTER: Objection, form,
11 compound.

12 THE WITNESS: Can you ask the
13 sentence again, please?

14 MR. SNAPP: Sure.

15 BY MR. SNAPP:

16 Q. I'm just trying to understand,
17 trying to short-circuit, maybe take out an
18 hour of questioning.

19 Did you -- do you intend at any
20 point in this case to try to attribute some
21 portion of your bottom-line abatement numbers
22 in Scenarios A through D in Exhibit 3 to
23 Cuyahoga and Summit Counties?

24 A. I -- I am -- I will do what
25 I'm -- I mean, I'm here to serve the courts

1 as best I can with my scientific knowledge.

2 I did not multiply 0.015 times
3 the bottom-line numbers in any of those
4 scenarios in order to identify a value that
5 would be the analogous value to the
6 \$6.7 billion that's in paragraph 180 of
7 Exhibit 1, but that would be the nature of
8 such a calculation.

9 Q. Sir, are you saying that you
10 intend to do so in the future, if asked?

11 A. Are you asking whether I intend
12 to multiply one number by 1.5%?

13 Q. Yes.

14 A. Because that's -- that's what
15 we would be talking about.

16 Q. Okay.

17 A. I don't know.

18 Q. Okay. Do you think that 1.5%
19 calculation that you did in paragraph 180, is
20 that a reliable method of determining what
21 portion of abatement costs should be
22 attributed to Cuyahoga and Summit Counties?

23 A. I believe there's other -- I
24 believe there are other experts who are
25 focused squarely on doing just that.

1 Q. And so is the answer to my
2 question you don't know?

3 A. I'm sorry. Let me clarify.
4 I believe there are other
5 experts whose work is focused on estimating
6 the specific costs in Cuyahoga and Summit
7 Counties.

8 Q. Do you see any limitations in
9 doing the calculation that you did to get to
10 1.5%?

11 A. Yes, I do.

12 Q. And what are those limitations,
13 sir?

14 A. I looked at one measure of
15 morbidity or mortality in one year as the
16 method of allocation, and I believe that
17 that's a limited -- a limited way to appraise
18 attributable share or allocation share.

19 It's not what I was asked to
20 do. I was not asked -- I mean, I provided
21 paragraph 180 as a high-level qualified
22 caveated approach of thinking about the
23 potential costs in two counties in the United
24 States.

25 Q. And so that 1.5%, if you

1 applied it to each of your individual
2 abatement remedies, would that be a way to
3 figure out, with all the caveats that you
4 included, how much each of those abatement
5 remedies should cost within Cuyahoga and
6 Summit Counties?

7 A. There are other experts whose
8 work has focused squarely on identifying the
9 needs and costs of those counties.

10 Q. For example, if I wanted to
11 determine -- I understand what you're saying,
12 but if I wanted to determine for your mass
13 media campaign the population that you were
14 focused on with your mass media campaign in
15 Cuyahoga and Summit Counties, would I take
16 the 150 million multiplied by 1%?

17 A. I'm sorry, where is the
18 150 million coming from?

19 Q. Well, that's the population
20 that you used in mass -- for mass media, the
21 mass media target population that's on the
22 screen right now. And you -- that remained
23 constant year after year.

24 So if I wanted to figure out
25 the mass media target population within

1 Cuyahoga and Summit Counties, would I
2 multiply that by 1.5% if I were using your
3 methodology?

4 A. No.

5 Q. What would I do?

6 A. Well, I'm not sure -- I mean,
7 if you multiply 150 million by 1.5%, there's
8 no dollar signs in there, so I don't know
9 that that -- that's a population times a
10 percent.

11 Q. Well, there's no dollar signs
12 in opioid overdose deaths either, sir, but
13 you used that as a percentage -- that's how
14 you got your percentage, right?

15 A. Yeah, I think I may have
16 misunderstood your question. Can you please
17 ask again the question about mass media?

18 Q. Sure.

19 So using your methodology of
20 attributing a certain portion of national
21 abatement costs to Cuyahoga and Summit County
22 by multiplying the numbers by 1.5%, if I
23 wanted to figure out the mass media target
24 population in Cuyahoga and Summit Counties,
25 would I multiply the 150 million by 1.5%?

1 MS. RITTER: Objection,
2 foundation.

3 A. No. I mean, I didn't design
4 these estimates to be multiplied by 1.5% to
5 derive individual abatement estimates for
6 each category for the counties. But even if
7 you -- so that was not my intent, but even --
8 so that was not my intent.

9 BY MR. SNAPP:

10 Q. But isn't that essentially what
11 you did by taking the -- all the different
12 numbers, all of the different calculations
13 that are here in Exhibit 3 for each of the
14 abatement categories and adding them up and
15 then multiplying them by 1.5%? Isn't that
16 exactly what you did?

17 A. Well, so I guess I'm not fully
18 understanding the intention of your question.
19 So let me clarify one thing first.

20 I think if you were to want to
21 know if you -- assuming that the abatement
22 estimate that I made for mass media is
23 correct, let's just take year one, it was,
24 based on what you're showing here, about
25 \$568 million. So the 1.5% would be

1 multiplied by 568 --

2 MS. RITTER: 5.6 billion.

3 THE WITNESS: That's the
4 ten-year cost. I was just doing
5 year-one costs.

6 MS. RITTER: Okay. I'm sorry.

7 A. Okay. We can take the ten-year
8 costs. If one were to multiply out, one
9 would be multiplying 1.5% by the 5.7 billion,
10 not by 150 million. In other words, you
11 would be multiplying the fractional morbidity
12 that we believe has accrued in the counties
13 by the total estimated cost for the media
14 abatement campaign in the counties.

15 So that's to clarify a prior
16 question that I believe you asked when you
17 asked would you multiply 150 million by
18 something.

19 BY MR. SNAPP:

20 Q. So --

21 A. But with all of that said, this
22 was just -- as I write in my report, this
23 was, you know, ultimately detailed
24 assessments of the specific costs will be
25 required and there are a number of

1 limitations in extrapolating from national
2 estimates to specific localities.

3 Nevertheless -- and then I used this example.

4 And I've provided -- I've given
5 you some examples of why I think that 2017
6 overdoses has limits in terms of
7 understanding the share of the total
8 abatement costs that would be reasonable to
9 allocate to these specific counties.

10 Q. Okay. So just as another
11 example, if you were to take your 1.5% and
12 multiply it by the mass media target
13 population, you'd get 2.25 million. That's
14 the math, okay?

15 A. Okay. Okay.

16 Q. And just for your information,
17 in Cuyahoga and Summit Counties -- and I can
18 show you the Census Bureau information --

19 A. Right.

20 Q. -- there are only 1.78 million
21 people in both counties combined, so you'd be
22 overestimating the mass media target
23 population costs by using the simple 1.5%,
24 correct?

25 A. Yes.

1 Q. And that's a limitation of
2 using any sort of calculation to allocate --
3 any sort of simple calculation to allocate
4 national abatement costs to any particular
5 jurisdiction, correct?

6 A. Yes. Yes.

7 Q. Sir, if you could turn to your
8 Exhibit 1 again, which is your April 3rd
9 report, I think you've already explained
10 this, but I just want to make sure I
11 understand.

12 In paragraphs 35 through 39 of
13 the report, you discuss the fact that
14 opioid -- the opioid epidemic has impacted
15 communities differently, correct?

16 A. Yes, sir.

17 Q. And you say, because of that --
18 because of this, there's not a
19 one-size-fits-all approach with respect to
20 the abatement remedies, correct?

21 A. Yes, sir.

22 Q. And then further down in the
23 paragraph -- well, you discussed in that same
24 paragraph the fact that some communities have
25 had different investments in abatement

1 remedies and others have invested in other
2 types of remedies.

3 And then you go on to say:
4 Each of the remedies are worthy of
5 consideration. Some will be far more
6 important than others in specific communities
7 and stakeholders should be consulted as
8 abatement remedies are iteratively designed,
9 deployed and evaluated at local levels.

10 Is that essentially what you've
11 been trying to say all day?

12 A. That's a statement that I agree
13 with, yes.

14 Q. Okay. You agree with that
15 statement.

16 And then you go on in the next
17 paragraph, paragraph 36, and you note that
18 the foundation of any community's response
19 should be a comprehensive needs assessment
20 which is based on a systematic approach for
21 reviewing the public health needs faced by a
22 population.

23 Do you agree with that
24 statement as well, sir?

25 A. Yes, sir.

1 Q. And so the foundation, what do
2 you mean by the foundation? Does that mean
3 the bedrock principle that it's required, you
4 absolutely have to do a comprehensive needs
5 assessment?

6 A. Well, unfortunately, as I write
7 about elsewhere in my report, communities
8 haven't necessarily had the luxury to -- you
9 know, communities vary in their resources and
10 their ability to perform comprehensive needs
11 assessments.

12 So by foundation, I mean that I
13 think that abatement remedies will be most
14 effective when they're based on careful
15 examination of the needs of a specific
16 community.

17 Q. Just so we're clear, you have
18 not conducted yourself a comprehensive needs
19 assessment in Cuyahoga and Summit Counties,
20 correct?

21 A. That's correct.

22 Q. Have you suggested to anyone in
23 Cuyahoga or Summit County government that
24 they should conduct a comprehensive needs
25 assessment?

1 A. No.

2 Q. Just sticking on the same
3 general issue, sir, if you turn to the next
4 page, there's a footnote at the bottom of
5 page 12, and you're footnoting to one of the
6 six steps that you've listed above for
7 conducting a comprehensive needs assessment.

8 And you say in footnote 10:
9 Strategies should be prioritized given
10 pre-identified criteria, such as size and
11 severity of problem, current interventions
12 and resources, economic and social impact and
13 magnitude of public health concern.

14 Is that correct, sir? Do you
15 agree with that?

16 A. With the statement?

17 Q. Yes.

18 A. Yes, sir.

19 Q. And just so we're clear, you
20 have not yourself in your model taken into
21 account these factors, in particular, the
22 current interventions and resources that have
23 been implemented in Cuyahoga and Summit
24 Counties; is that correct?

25 A. Yes, it is. My model is a

1 national model, not a local model.

2 Q. Thank you, sir.

3 MR. SNAPP: I'm just going to
4 take a look at my notes here.

5 THE WITNESS: Sure.

6 (Document review.)

7 BY MR. SNAPP:

8 Q. So I know you've already
9 mentioned some of the limitations of using
10 the 2017 overdose death rates as a proxy
11 for -- to allocate the national abatement
12 cost to Cuyahoga and Summit Counties, but I
13 want to just ask a few more questions about
14 that issue.

15 A. Of course.

16 Q. So are there other proxies you
17 could have used?

18 A. Yes, sir.

19 Q. Is one of them, for example,
20 the general population within Cuyahoga and
21 Summit Counties as -- in comparison to the
22 general population of the U.S.?

23 A. Yes, although that may raise
24 concerns because Ohio has beared an
25 especially large brunt of the opioid

1 epidemic, and so the rate of morbidity and
2 mortality in Ohio is phenomenally high
3 compared with many parts of the country.

4 Q. If you had done a comparison --
5 do you know what the -- strike that.

6 If you had used the general
7 population as a proxy, do you know what the
8 percentage would be instead of 1.5%?

9 A. I do not.

10 Q. I did the math, and it would be
11 roughly .55% instead of 1.5%. In other
12 words, I could show you the source documents
13 if you'd like to see them from the Census
14 Bureau.

15 A. No that's fine.

16 Q. So in Cuyahoga and Summit
17 Counties, the total population is 1,785,775,
18 and the total U.S. population according to
19 census data on the same date is 327,167,434.

20 And so if you do the math, sir,
21 the percentage of the total U.S. population
22 that's in Cuyahoga and Summit Counties is
23 0.55%.

24 A. Uh-huh.

25 Q. Would you think that would be a

1 reasonable way to try to allocate national
2 costs to those counties?

3 MS. RITTER: Objection, asked
4 and answered.

5 A. No, I do not.

6 BY MR. SNAPP:

7 Q. And why is that?

8 A. I believe I noted already that
9 Ohio and, including Summit and Cuyahoga
10 County, have borne an especially large brunt
11 of the epidemic, and the -- with rates of
12 overdose and death that are phenomenally
13 higher than many other parts of the country.

14 So I -- as a public health
15 expert, my recommendation for the courts
16 would not be to allocate resources based on
17 population alone because the population
18 living in an area may or may not be in dire
19 need of services.

20 Q. Sir, do you know if national --
21 nationally, the overdose death rate in 2018
22 is higher or lower than in 2017?

23 A. I'm not aware that we have
24 final data on the 2018 overdose deaths.

25 Q. Do you have any preliminary

1 data you've seen?

2 A. I don't recall, but what I
3 would say is that based on -- you know, as I
4 discuss in my report and based on my read of
5 the landscape, that there remains, you know,
6 a dire epidemic in many communities,
7 including Summit and Cuyahoga County.

8 Q. Your model estimates that -- it
9 predicts that 2018 overdose deaths will
10 increase over 2017, right?

11 A. I'd want to look with you to
12 make sure, if that's the case.

13 Q. We can take a look.

14 MR. SNAPP: Let me just -- if
15 you can take it down for just a second
16 and let me see if I can find that
17 particular cover sheet -- or
18 particular sheets.

19 Okay. You can put it up.

20 BY MR. SNAPP:

21 Q. It actually looks like your
22 model actually does -- I misspoke, it
23 actually shows a slight decrease from 17,075
24 in 2017 to 17,057 in 2018; is that correct?

25 A. For prescription --

1 Q. For prescription death.

2 A. For prescription opioid deaths,
3 but that excludes opioid deaths from
4 individuals dying from heroin --

5 Q. Okay.

6 A. -- whose initial opioid of use
7 was a prescription opioid.

8 Q. So if we look at total overdose
9 death, including illicit fentanyl, you
10 actually have increasing numbers in your
11 model, correct?

12 A. Yes, sir.

13 Q. And so is that the number we
14 should be looking at?

15 A. It depends on your question.

16 Q. Well, I'm just trying to figure
17 out if the national trends for overdose
18 deaths that you used in your calculation of
19 the 1.5% is rising or going down.

20 A. The -- well, both the -- all of
21 the numbers are dynamic, and all of the
22 numbers are dynamic, both the numbers for
23 Cuyahoga and Summit County as well as the
24 national numbers.

25 So these numbers could be

1 updated to 2018. There are a number of ways
2 that one could look at different measures in
3 order to try to estimate an allocation share
4 for the -- for Summit and Cuyahoga County.

5 But once again, that was not
6 the focus of my work.

7 Q. Understood.

8 But you did note in
9 paragraph 23 that overdose deaths in Cuyahoga
10 county are estimated to have dropped from
11 2017 to 2018, and in Summit County, total
12 overdose deaths declined also from 2016 to
13 2018, correct?

14 MS. RITTER: Objection to the
15 form, foundation. That's not
16 precisely what's written there.

17 A. Yeah. Yes, in paragraph 23, I
18 identify what I refer to as some gains in
19 Cuyahoga and Summit County, including
20 reductions in deaths from fentanyl and heroin
21 in Cuyahoga County, and reductions in total
22 overdose deaths in Summit County.

23 BY MR. SNAPP:

24 Q. And so if overdose deaths are
25 declining in Cuyahoga and Summit County

1 generally, and according to your model, total
2 overdose deaths are increasing nationally, if
3 you were using 2018 numbers to get a
4 percentage attributable to Cuyahoga and
5 Summit County, it would be less than 1.5%,
6 right?

7 A. Yes, I -- yes. If I'm
8 understanding your question correctly, yes,
9 it would.

10 MR. SNAPP: Okay. Let me take
11 a look at my notes. I might be very
12 close to done, sir.

13 THE WITNESS: Okay.

14 THE REPORTER: Want to go off?

15 MR. SNAPP: No.

16 (Document review.)

17 BY MR. SNAPP:

18 Q. I did want to ask you, sir,
19 about the -- I think we've marked previously
20 your notes from your trip to Akron.

21 A. Yes, sir.

22 Q. I just wanted to ask you a few
23 questions about those just to clarify a few
24 things.

25 A. Of course.

1 Q. They're marked as Exhibit 4.

2 A. Okay.

3 Q. Now, do you have any other
4 notes other than the notes that we've marked
5 as Exhibit 4 from your meetings in Akron?

6 A. No, I do not.

7 Q. Did you take these notes
8 yourself?

9 A. Yes, I did.

10 Q. Who did you meet with?

11 A. I don't recall their names.

12 Q. Do you know their positions?

13 A. I could provide my best recall,
14 if that's helpful.

15 Q. Yes, please.

16 A. The people I met with included
17 experts in addiction and -- the people I met
18 with included experts in addiction and
19 individuals within the addiction treatment
20 facilities, at least within Summit County, if
21 not some individuals from Cuyahoga County as
22 well.

23 There were I believe one or
24 more sheriffs present. I believe there were
25 detectives present, police officers. I

1 believe there were public health officials
2 and experts from the Department of Public
3 Health -- from the departments of public
4 health from these communities.

5 Q. Okay.

6 A. I believe there were
7 individuals from the foster care and child
8 protective services organizations within
9 these communities. I believe there were
10 representatives from counsel from the
11 communities.

12 Q. Okay. I don't mean to cut you
13 off, but that's a lengthy list.

14 A. Yeah.

15 Q. And I just want to understand,
16 sir: Were you -- were these people all
17 gathered just to meet with you, or was this
18 part of some other meeting?

19 A. I believe the goal of the
20 meeting was to allow for me to have an
21 opportunity to supplement the various written
22 materials that were and after the fact were
23 provided to me --

24 Q. Okay.

25 A. -- with -- with an opportunity

1 to speak with individuals from the
2 communities.

3 Q. Okay. So I just want to ask
4 about a few of your notes here.

5 Down on the bottom of the first
6 page, about seven bullets down, there's a
7 reference about 28 beds of detox. Do you see
8 where I'm talking about?

9 A. Yes, sir.

10 Q. It says: 28 beds of detox, was
11 expanded from 16 to 28 beds, but at times
12 they have had only four people in the
13 program.

14 So my question is: To me, this
15 sounds like there was an underutilization of
16 the available resources. Does that sound
17 right to you, sir?

18 A. Yes, sir.

19 Q. So if the existing resources
20 aren't used, why would there be a need to --
21 for an abatement program to add more
22 resources?

23 A. Well, you know, my report was
24 focused on national abatement remedies, and I
25 believe that other experts are providing

1 detailed recommendations regarding the
2 community.

3 But, you know, this
4 represents -- I don't know the context in
5 which this quote was provided, and this
6 represents, I presume, one person's
7 perspective at one point in time about one
8 small piece of a broad and complex treatment
9 landscape.

10 So I certainly would not want
11 to conclude from this that enough is being
12 done. I think the real measure of that is
13 the number of people that are dying or
14 developing addiction from opioids in the
15 communities.

16 Q. I understand, but from your
17 notes at least, it appears that some of the
18 existing resources are underutilized,
19 correct?

20 A. Yes, sir.

21 Q. Now, if you turn to the next
22 page, near the bottom -- well, I guess
23 partway down, there's a bullet that says:
24 Right now Akron City Fire, 50 ODs a month.
25 Last year it was 100 ODs a month.

1 Do you see that?

2 A. Yes, sir.

3 Q. And then further down there's a
4 reference -- and I think it's referring to
5 the same ODs. It says: Variety of reasons
6 ODs have gone down.

7 Do you see that?

8 A. Yes, sir.

9 Q. It goes on to say: More meth
10 is coming into the city.

11 Is that a reference to
12 methamphetamine?

13 A. Yes, sir.

14 Q. Another illicit drug?

15 A. Yes, sir.

16 Q. People are cutting heroin with
17 fentanyl more carefully, getting carfentanil
18 off the street. And then it says: Mixed
19 signals from group regarding whether or not
20 number of these -- those with OUD have
21 declined.

22 Now, do you have an
23 understanding of what's causing -- well, let
24 me ask you this.

25 Do you know one way or another

1 whether those are the reasons that overdoses
2 have gone down in the city of Akron?

3 A. Well, I wouldn't -- I wouldn't
4 want to infer from my notes of a -- from my
5 review of these notes of a meeting that took
6 place a year ago, you know, I wouldn't want
7 to attribute causality here.

8 Q. Okay. Fair enough.

9 If we could turn to the next --
10 a couple of pages later, the page that has
11 "Is there any estimate" at the top.

12 A. Okay.

13 Q. Partway down, there is a
14 lengthy paragraph that starts with
15 "Children," and it ends with "lots of
16 polysubstance abuse -- substance use."

17 Do you see that?

18 A. Yes, sir.

19 Q. What is polysubstance use?

20 A. That refers to individuals that
21 use more than one illicit substance.

22 Q. So it sounds like, based on
23 your notes of your meeting with the people in
24 Akron, that someone during that meeting said
25 that there's lots of polysubstance use in

1 their community; is that correct?

2 A. Yeah. Within the context of
3 discussing -- I want to read this more
4 carefully, but in my brief review of this
5 paragraph, it looks as if I'm discussing
6 pregnant women and children. So, for
7 example, I say: Over 200 or more that are
8 under child protective services' care; a
9 quarter of kids are felt to be opioid-related
10 children. The number of people -- children
11 in permanent custody available for adoption
12 has doubled, a significant number of families
13 in drug courts.

14 Q. Right.

15 A. A lot of NAS, neonatal
16 abstinence syndrome, no specific numbers, and
17 lots of polysubstance use.

18 So I think that I'm referring
19 to -- in this case I'm probably taking notes
20 based on the feedback from one of the leaders
21 from the community that helps take care of
22 pregnant women and their children.

23 Q. Sir, you'd agree there's lots
24 of polysubstance use all over the country,
25 right?

1 A. Well, I mean, there are -- yes.
2 Yes, I would.

3 Q. And in your model, did you make
4 any attempt to segregate out abatement costs
5 for prescription opioid use or abuse as
6 opposed to polysubstance use and abuse?

7 A. I mean, indirectly in that we
8 account for individuals that may have complex
9 opioid use disorders that may be more costly
10 to care for, that's another benefit, an
11 incremental benefit that we believe our model
12 poses over other models that have been
13 developed. And some of these individuals
14 with opioid use disorder are individuals that
15 have polysubstance use.

16 So indirectly we did in terms
17 of thinking about the treatment population
18 that has opioid use disorder.

19 Q. Sure. But directly, you
20 haven't directly tried to segregate out
21 opioid abatement costs for those who are
22 nonpolysubstance users, right?

23 A. No. I mean, it would be --
24 we've not.

25 MR. SNAPP: Can we take a

1 break?

2 THE WITNESS: Yes.

3 MR. SNAPP: Okay. Thank you.

4 THE WITNESS: Thank you.

5 THE VIDEOGRAPHER: Going off
6 the record at 4:02 p.m.

7 (Recess taken, 4:02 p.m. to
8 4:16 p.m.)

9 (Whereupon, Deposition Exhibit
10 Alexander-16, USB Drive Containing MAT
11 Model 2.0 V51 Spreadsheet, was marked
12 for identification.)

13 THE VIDEOGRAPHER: We're back
14 on the record at 4:17 p.m.

15 MR. SNAPP: Dr. Alexander, I'm
16 marking -- and this is for the record,
17 Deposition Exhibit 16, which is a
18 flash drive that contains the
19 spreadsheet that contains your MAT --
20 just give me one second, I'll tell you
21 exactly what it's called. It is the
22 MAT Model 2.0 V51. So we will now
23 have that as part of the record. And
24 we already had the other two other
25 spreadsheets.

1 And I just have a couple more
2 questions for you and then I'm going
3 to pass you to one of the other
4 lawyers who's going to ask you some
5 questions.

6 THE WITNESS: Sure.

7 BY MR. SNAPP:

8 Q. So, sir, based on everything
9 that we've talked about today, do you have
10 any changes that you'd like to make to any of
11 your prior answers?

12 A. No. I appreciate your asking,
13 but I do not.

14 Q. And based on everything that
15 we've talked about today, do you intend to
16 make any changes to any of your opinions that
17 are included in your reports that are marked
18 as Deposition Exhibits 1, 2 and 3?

19 A. No, not at this time.

20 MR. SNAPP: I have no further
21 questions. I'm going to pass you to
22 Mr. Alexander.

23 THE WITNESS: Thank you very
24 much.

25 THE VIDEOGRAPHER: Off the

1 record at 4:18 p.m.

2 (Recess taken, 4:18 p.m. to
3 break 4:19 p.m.)

4 THE VIDEOGRAPHER: We're back
5 on the record at 4:19 p.m.

6 EXAMINATION

7 BY MR. ALEXANDER:

8 Q. Dr. Alexander, my name is Eric
9 Alexander. I have a couple more questions
10 for you. I represent a different defendant
11 than the prior questioner. So I have some
12 different questions. I'm going to try not to
13 repeat anything that he asked. In fact, I'm
14 pretty sure I won't, other than to maybe use
15 it as a predicate for some additional
16 questions.

17 Does that make sense?

18 A. Yes, it does.

19 Q. I'll give you an example. So
20 you were asked earlier some questions about
21 whether you had any opinions specific to the
22 conduct of any or all of the defendants
23 collectively.

24 Do you remember those
25 questions?

1 A. Yes, in broad form.

2 Q. And you were also asked
3 questions about whether you had opinions
4 where you could attribute any kind of fault
5 or portion of any sort of abatement plan to
6 anything specific to what the specific
7 defendants or defendants in groups of
8 defendants did.

9 Do you remember those questions
10 and answers?

11 A. Yes, I do, once again, in broad
12 form.

13 Q. So there were 17 different
14 defendants in the case in which -- or cases
15 in which you've been designated as an expert.
16 Do you know the names of any of them?

17 A. I believe I do.

18 Q. Which ones do you think you
19 know?

20 A. I believe Purdue is a
21 designated defendant. I believe Janssen may
22 be. I believe Mallinckrodt may be. I
23 believe Teva may be, and I believe the three
24 large wholesalers also, McKesson,
25 AmerisourceBergen and Cardinal, may be.

1 Q. Okay.

2 A. And I also believe that some
3 pharmacies such as Walgreens may be.

4 Q. Okay. So for the ones you
5 named, even though you know their names, you
6 don't have any opinions specific to the
7 conduct or the impact of the specific conduct
8 by any of those defendants, correct?

9 A. What do you mean when you say
10 opinions?

11 Q. Opinions that you would offer
12 at trial if called at trial to testify as an
13 expert within the scope of the report and the
14 supplemental reports that you've provided so
15 far.

16 A. You know, as I noted earlier,
17 I'm here to serve, and if I'm asked to assist
18 the court in some matter, I will do my best
19 to do so. But I was not asked as part of the
20 report that I've prepared to evaluate or
21 attempt to apportion responsibility across
22 defendants.

23 Q. Okay. Let me ask my question
24 again.

25 Sitting here today under oath,

1 do you have any opinions that you would offer
2 about the conduct of any of the specific
3 defendants in this case who you know their
4 names?

5 A. Yeah, I'm not quite sure if by
6 opinion you're using that term in like a
7 legal sense or just a more broad sense; for
8 example, so maybe you would help clarify for
9 me if you mean a -- what you mean by opinion.

10 Q. Sure.

11 So you know you're here as a
12 designated expert witness?

13 A. Yes.

14 Q. And experts can give opinions
15 within the scope of their designation
16 according to what they've put in their report
17 and --

18 A. Yes.

19 Q. -- consistent with whatever the
20 court rules about what's permissible.

21 You understand that, right?

22 A. Yes.

23 Q. So it's not your opinion about
24 whose crab cakes you like better or which
25 lacrosse team you like better or anything

1 like that. It's actually an expert opinion
2 within the areas where you claim an expert.

3 A. Okay.

4 Q. Which is why you had those
5 questions earlier about what are the areas
6 where you're an expert and what are the areas
7 where you're not an expert.

8 A. Right.

9 Q. Does that make sense?

10 A. Yes, it does.

11 Q. So focusing on actual expert
12 opinions, do you intend to offer any opinions
13 specific to the conduct of any of the
14 specific defendants whose names you know?

15 A. Not at this time.

16 Q. Okay. And in terms of the
17 groups of defendants, you were asked a number
18 of questions about various aspects relating
19 to manufacturing defendants. Do you remember
20 those questions? Or manufacturers?

21 A. As to whether I -- yes, I do
22 remember in broad form those questions.

23 Q. Okay. So even if you don't
24 know the name of a specific manufacturer, you
25 don't intend to offer any opinions about what

1 the manufacturers individually or
2 collectively did or didn't do and what impact
3 that had, correct?

4 A. Correct.

5 Q. Okay. And the distributors,
6 you knew the names of three big distributors
7 or wholesalers as you called them.

8 You don't know -- I'm sorry,
9 you don't intend to offer any expert opinions
10 about what the distributors individually or
11 collectively did or didn't do and what the
12 impact would be of any of that, correct?

13 A. Yes, correct.

14 Q. Okay. Same thing goes for the
15 other class of defendants, the retail
16 pharmacy defendants and anybody else who's a
17 defendant in this case, you don't intend to
18 offer an expert opinion about what they did
19 or didn't do individually or collectively and
20 what the impact would be of any of that,
21 correct?

22 A. Correct.

23 Q. Okay. So to take it a step
24 further, there have been a couple of specific
25 prescription drugs identified during the

1 course of the deposition, correct?

2 A. Yes.

3 Q. And I'm not going to go through
4 all of the brand names or the generic names
5 or the chemical names of all of them, but
6 none of your opinions are specific to
7 specific prescription drugs by saying here's
8 the percentage of harm caused by the use of
9 this particular compound, whether it was
10 branded or generic, correct?

11 A. Correct.

12 Q. And the same thing goes for any
13 of the various illicit drugs, including
14 fentanyl analogs or nonopioids, there's no
15 part of your opinion where you're breaking it
16 down and saying here's a percentage of harm
17 or here's an amount of harm or necessary
18 abatement that I can attribute to a specific
19 category of drugs, other than what you said
20 altogether of everything's opioid crisis,
21 correct?

22 A. That's not correct.

23 Q. So is there some category of
24 drugs where you're offering specific opinions
25 about the amount of abatement or the specific

1 remedies in terms of abatement that would be
2 necessary?

3 A. Yes, sir.

4 Q. What category?

5 A. Prescription opioids,
6 prescription opioid use disorder, heroin use
7 disorder that's started among individuals
8 that have prior prescription opioid use and
9 heroin use disorder among individuals that
10 have never used prescription opioids before.

11 Q. Okay. And you feel during the
12 first round of questioning by Mr. Snapp that
13 you went over all of your opinions relating
14 to that subject of what you could attribute
15 to those use categories, correct?

16 A. No, not correct.

17 Q. You have other opinions that
18 weren't disclosed or weren't discussed that
19 are specific to a portion of harm
20 attributable to, let's say, heroin use?

21 A. Yes.

22 Q. Are those in your report
23 somewhere?

24 A. I would have to look carefully,
25 but they're contained within either my report

1 or the materials that were produced as part
2 and parcel of my report.

3 Q. So let's try it this way.

4 In terms of the specific
5 prescription drugs, is there some portion of
6 the harm or the need for remedies that you
7 can attribute to a specific name of a
8 prescription drug, even if you don't know who
9 manufactured it?

10 A. Not based on the materials that
11 I've provided to the courts thus far.

12 Q. Have you looked at any data
13 that would let you look at Cuyahoga and
14 Summit County in particular to look at the
15 specific usage or distribution patterns among
16 the various prescription drugs or among the
17 various illicit drugs or combinations of
18 illicit drugs?

19 A. I've looked at those data, but
20 not with an intention of apportioning in the
21 respect that you're inquiring about.

22 Q. Okay. So when it comes to
23 groups of drugs or kind of users of drugs,
24 the only way in which you're drawing these
25 sorts of lines is as part of your model that

1 you went over earlier with basically the flow
2 sheet for how different populations change
3 over time; is that correct?

4 A. Yes. The flow sheets, the
5 attendant costs of those populations. I
6 suppose the other areas, you know, with MAT,
7 I have some specific discussion of individual
8 products, but that's not with respect to
9 apportioning harms.

10 Q. Right. You're not saying
11 here's how much of the cost would be related
12 to the use of buprenorphine versus methadone
13 versus morphine or something?

14 A. Well, I do in providing a broad
15 framework with assumptions, as we discussed,
16 in the context of the initial national
17 abatement estimates, you know, I assume a
18 certain distribution of those, so I do in
19 that context.

20 Q. Sitting here today, do you know
21 a portion of users of MAT start with an
22 illegal drug of some sort as opposed to with
23 some sort of direct progression from a
24 prescription opioid?

25 A. I'm sorry, you're asking -- can

1 you repeat the question, please.

2 Q. Sure.

3 You talked about
4 medical-assisted therapy and the drugs used
5 in that, correct?

6 A. Right.

7 Q. Do you know the portion of MAT
8 users, either in the United States or
9 Cuyahoga and Summit County, who actually
10 start with an illicit drug or combination of
11 illicit drugs as their drug of abuse?

12 A. Well, our -- yes, I have -- you
13 know, our model includes inputs from a
14 variety of data sources in order to be able
15 to estimate that proportion.

16 Q. Okay. And so whatever you know
17 about the percentage of users of MAT to come
18 up with your model is accounted for in the
19 various spreadsheets and supporting data,
20 correct?

21 A. I'm sorry. Can you ask the
22 question again?

23 Q. Let me ask: Sitting here
24 today, do you know what percentage that is of
25 the users of MAT who start with an illicit

1 drug as their substance of abuse?

2 A. Well, as when you say users of
3 MAT, I'm thinking of people that are in
4 treatment for opioid use disorder, and of
5 people that are being currently treated for
6 opioid use disorder, I cannot provide a
7 precise estimate at this time regarding, of
8 all people currently in treatment for opioid
9 use disorder, what proportion have
10 prescription opioid use disorder, what
11 proportion have heroin opioid use disorder
12 that started with prescriptions first, and
13 what proportion had pure heroin use disorder.

14 Q. In terms of the word
15 "precision," does that have a specific
16 meaning in your world as a
17 pharmacoepidemiologist?

18 A. Yes. I mean, the term can be
19 used in a variety of contexts, but yes.

20 Q. So you asked earlier about
21 confidence intervals and how you didn't have
22 any confidence intervals for any kind of end
23 number that came out of your model.

24 Do you remember that
25 questioning?

1 A. Yes, I do.

2 Q. Do you have any a priori
3 precision requirements for your model?

4 A. Well, the model -- I mean,
5 there's a Markov model and then there are
6 redress estimates, and so are you referring
7 to the Markov model or the redress estimates?

8 Q. The one you called the APOLLO
9 model, I suppose.

10 A. Okay. And your question is do
11 I have a priori requirements for certain
12 levels of precision?

13 Q. That's exactly what I asked,
14 yes.

15 A. Yeah. We -- you know, I think
16 as I spoke before, ultimately the model is
17 calibrated, and those calibrations are one of
18 the principal methods that we use to examine
19 and that one uses to exam the adequacy of the
20 model.

21 And in this instance, I
22 calibrated the model in order to fit it as
23 best I could to a variety of parameters that
24 I had the greatest confidence in. And then
25 we assessed the -- you know, we assessed the

1 quality of the model in many ways.

2 Q. So let me go back to my
3 question.

4 A. Yeah. Yeah.

5 Q. Sitting here today, are there
6 current precision requirements for your
7 model, that it has to be within plus or minus
8 5%, 10%, some other measure that one might
9 have for precision according to the standards
10 of pharmacoepidemiology?

11 A. No, the overall fit and quality
12 of the model is based on many different
13 factors.

14 Q. Okay.

15 A. And so there's not one single
16 parameter that we say we need to be able to
17 estimate overdose deaths plus or minus 5% or
18 this model is no good. The answer is no,
19 there's no single factor -- there's no single
20 a priori requirement for a given component
21 because there are, you know, dozens of
22 parameters and a dozen or more boxes.

23 Q. So you're not even saying I
24 know that whatever comes out of my model will
25 be plus or minus 5%, correct?

1 A. Well, there are a number of
2 ways that -- there are a number of steps that
3 I took and that one takes in order to assess
4 and ensure the quality of a model such as the
5 model that we've built.

6 Q. Sitting here today in terms of
7 the requirements of your model, it wasn't
8 built in a way that it can guarantee the
9 results will be even within 5%. You'll give
10 a point estimate, but you won't have any
11 degree of precision as to the reliability of
12 that, correct?

13 MS. RITTER: Objection to form.

14 THE WITNESS: Can you ask that
15 again, please?

16 MR. ALEXANDER: Sure.

17 BY MR. ALEXANDER:

18 Q. The way your model is set up,
19 it gives a variety of point estimates,
20 correct?

21 A. Yes.

22 Q. And there will be no level of
23 certainty that any of those point estimates
24 will be accurate within any certain percent,
25 even 5% or 10%, correct?

1 A. Well, we -- you know, we did
2 not have an opportunity to discuss this, but
3 we include sensitivity analyses, and these
4 have been provided as part of the model. And
5 what these analyses do is they assess the
6 robustness of the model. They assess whether
7 or not, when you change one parameter, an
8 outcome that one cares about changes plus or
9 minus 5% or not.

10 Q. So sensitivity is different
11 than what I'm talking about, which is that
12 you have a degree of confidence, like --
13 let's take a step back.

14 When you publish papers, you
15 typically have something where you say --
16 before you ever start the research project,
17 you'll have a requirement that whatever you
18 will present will have to be statistically
19 significant within certain parameters based
20 upon like a .05 p value or other fairly
21 standard statistical measures, correct?

22 A. When conducting hypothesis
23 testing, yes.

24 Q. And when conducting something
25 that's going to put out any kind of point

1 estimate like this, you also typically have
2 something where you have a requirement as to
3 the degree of precision that your ultimate
4 estimate will have; otherwise, you could
5 always just give an estimate between zero and
6 like 10 trillion, and it would be, you know,
7 about as reliable as what you're putting out,
8 right?

9 A. Well, we weren't --

10 MS. RITTER: Object to the
11 form.

12 A. We were not conducting
13 hypothesis testing here.

14 BY MR. ALEXANDER:

15 Q. I understand. So I'm saying
16 did you have any requirement for how you
17 designed the model that you would have any
18 degree of precision by plus or minus any
19 percent?

20 A. There was no single parameter
21 that I identified a priori as we must be
22 within X percent of this estimate for this
23 value, so that's -- that's not how these
24 models are generally built.

25 Q. Okay. And your hope is that

1 whatever the specific model that is chosen in
2 terms of what would be done to try to remedy
3 the harm would remedy as much of the harm as
4 possible. That's your hope out of all of
5 this, right?

6 A. Yes.

7 Q. And you said you didn't have
8 some preset requirement for what percentage
9 of the opioid-related, as it's been termed so
10 far, deaths would be eliminated or any
11 measure by which you're trying to reduce any
12 of the harms you've identified; you're just
13 trying to reduce all of them as much as
14 possible.

15 Is that a fair statement?

16 A. No. I mean, in our model we
17 include an entire tab that includes output
18 with our having assessed different
19 interventions, and, in fact, the estimates
20 that we provide for the number of
21 intervention -- for the number, for example,
22 of overdose deaths that we believe could be
23 achieved over ten years is -- is similar in
24 magnitude to those estimated by other models
25 that have been published.

1 Q. Okay.

2 A. And so we use both an
3 understanding of the development of the
4 model, the calibration of the model, and then
5 the concordance of the model with other
6 published models as some of many measures to
7 understand overall whether we believe the
8 model is performing well or not.

9 Q. So the -- you said this before,
10 that the model doesn't take into account
11 what's already being done in Cuyahoga and
12 Summit Counties or do anything to make it be
13 specific to Cuyahoga and Summit Counties
14 because it's a national model, correct?

15 A. Well, here --

16 Q. Is that correct or is that not
17 correct?

18 A. Well, we're talking about a
19 different model than the last line of
20 questioning.

21 Q. Right. So -- I know it's late,
22 but if you could just -- some of these --
23 it's yes or no and then you can explain.

24 A. Okay.

25 Q. So you have a national model?

1 A. Yes.

2 Q. That's what you've put forward
3 in the bulk of your expert report that's been
4 gone over in the course of the deposition so
5 far?

6 A. Yes, sir.

7 Q. And no portion of that is
8 focused on taking into account what Cuyahoga
9 or Summit County have been doing thus far or
10 how effective those measures have been,
11 correct?

12 A. That's correct.

13 Q. Okay. And in the course of the
14 kind of narrative part of your report, you
15 say in a number of places that some of the
16 measures taken by Cuyahoga or Summit County
17 have helped in various ways in terms of like
18 reducing deaths so far over the last couple
19 of years or increasing the number of people
20 getting treatment.

21 You remember those sorts of
22 general statements in your report?

23 A. Yes, I do.

24 Q. Okay. Is it your hope that
25 whatever happens going forward in Cuyahoga

1 and Summit County will make things better?

2 A. Yes.

3 Q. Okay. And there are various
4 ways in which you would measure improvement,
5 correct?

6 A. Yes.

7 Q. And is it also your view that
8 the earlier measures are put in place that
9 are going to be effective, the better the
10 overall result will be in terms of reducing
11 the harms you're trying to reduce?

12 A. I think there's an urgency to
13 act, but that urgency has to be -- those
14 actions have to be well informed.

15 Q. Right. So like I said, if you
16 put in place the measures that you think will
17 be effective based upon well-informed
18 consideration of what those measures should
19 be, the earlier they're put in place, the
20 greater the cumulative positive effect?

21 A. In general, yes. I mean,
22 there's a complicated trade-off that has to
23 happen, right, because if you don't -- if you
24 act blindly --

25 Q. Right, if you -- the question

1 is: If you act reasonably and with good
2 measures --

3 A. Right.

4 Q. -- the earlier you do it, the
5 better the result will be. That's the hope
6 of all of what you're engaged in here,
7 correct?

8 A. I think there is an urgent need
9 for intervention at a national and local
10 level.

11 Q. And so we said that you haven't
12 looked at any documents produced by any of
13 the defendants in the case, and you don't
14 remember reviewing any depositions taken of
15 anybody in the case, correct?

16 MS. RITTER: Objection, form.

17 A. That's not -- yeah, that's not
18 correct.

19 BY MR. ALEXANDER:

20 Q. So earlier when you said you
21 hadn't reviewed any testimony taken in the
22 case, you've now remembered that you have?

23 MS. RITTER: Objection, form.

24 That wasn't what was said.

25 Transcript.

1 A. Yeah, I -- I think I was asked
2 whether I had reviewed any transcripts
3 previously.

4 BY MR. ALEXANDER:

5 Q. Okay. So have you reviewed any
6 deposition transcripts of anybody deposed in
7 connection with this litigation?

8 A. Not that I recall.

9 Q. Okay. All right. So you
10 haven't reviewed any documents produced by
11 the defendants. You haven't reviewed any
12 deposition transcripts.

13 Have you reviewed any documents
14 produced by Cuyahoga or Summit County in this
15 litigation?

16 A. Yes, I have.

17 Q. Did you review the documents
18 produced by Summit and Cuyahoga County with
19 an eye towards assessing whether the measures
20 that they had adopted over time were measures
21 that you thought were reasonable both in
22 terms of what they did and when they did it?

23 A. Not at a -- that was not my
24 intention in reviewing those documents.

25 Q. Okay. So sitting here --

1 A. That was not my -- I'm sorry.

2 Q. So sitting here today, are you
3 in a position to say that Cuyahoga and Summit
4 County have been reasonable both in terms of
5 what they did and when they did it in terms
6 of initiating abatement or remedial measures
7 to try to fix or mitigate some of these
8 problems that you've been talking about?

9 A. You know, the focus of my
10 report was on a national abatement plan, and
11 in pursuing this, I did review materials from
12 Cuyahoga and Summit County and traveled to
13 Akron, as we've discussed.

14 My focus was not on evaluating
15 the -- on fully evaluating the adequacy,
16 comprehensiveness or impact of the measures
17 that they've taken thus far.

18 Q. Okay. So this is an easy one.
19 The answer to my question is, no, sitting
20 here today, I'm not in a position to say that
21 their conduct was reasonable in terms of when
22 they did it -- when they started taking
23 measures and what they did, right?

24 A. Well, it's -- it's not what I
25 was asked to do. I mean, I reviewed -- I did

1 review the -- I did review documents that
2 have given me the -- that have led to my
3 opinions that are included in my report, and
4 those opinions include many mentions of
5 activities that they've undertaken within
6 Summit and Cuyahoga County.

7 And I believe in my report I
8 speak to what I believe to be the
9 reasonableness of those interventions as well
10 as in some cases the potential impact that
11 they've had and the gains that they've been
12 accounted for.

13 But I would not characterize my
14 report as having conducted a comprehensive
15 evaluation of -- of the activities to date in
16 those counties.

17 Q. So did you ever look at the
18 timeliness of any of the actions from Summit
19 or Cuyahoga County in terms of whether, from
20 your perspective, they started taking
21 reasonable activities as soon as you think
22 they should have?

23 A. No, I did not.

24 Q. And you've been personally
25 involved in research and evaluation of these

1 issues outside of litigation for ten years
2 now; is that right?

3 A. I believe in my report I say
4 eight years, but about eight to ten years,
5 yes.

6 Q. And you know from some of the
7 stuff you've looked at that there have been
8 some statewide measures in Ohio that go back
9 to around 2010, correct?

10 A. Can you say more, please, by
11 what you mean by measures?

12 Q. Do you know when they started
13 having like statewide task forces or
14 committees to look at reducing any issues
15 relating to opioid abuse in the state of
16 Ohio?

17 A. I do not know the precise
18 dates.

19 Q. Okay. So you think some of the
20 things that Summit and Cuyahoga County have
21 been doing have been beneficial, correct?

22 A. Yes.

23 Q. And you think some of the
24 things that they've been doing recently, like
25 some of the changes in practices, are things

1 that if they had been started earlier would
2 have had an even greater beneficial effect
3 than what they've had so far, correct?

4 A. I mean, it's very hard to talk
5 about that in the abstract, but I think it's
6 plausible that greater resources devoted
7 earlier within a community could help to head
8 off community-level harms, yes.

9 Q. For instance, there are some
10 things that you note that Cuyahoga County has
11 been doing since like 2014, but Summit County
12 only started in 2018.

13 Remember some of those sorts of
14 observations that you set out in your report?

15 A. Well, I can -- I can -- I don't
16 have -- I don't remember specifically, but I
17 can -- so I don't remember specifically, no.

18 Q. Okay. So sitting here today,
19 can you offer an expert opinion that what
20 Summit County did to combat the impacts of
21 the opioid epidemic in Summit County have
22 been timely and reasonable with regard to all
23 the things you think that they should be
24 doing now?

25 A. No, I cannot.

1 Q. Okay. Same question for
2 Cuyahoga County. Sitting here today, can you
3 give an expert opinion that Cuyahoga County
4 has behaved reasonably in terms of timing and
5 effort to do all of the things you think they
6 should be doing to combat the opioid crisis
7 in Cuyahoga County?

8 A. Well, I mean, it's not what I
9 was asked to do. I guess I'm rethinking my
10 answer to the Summit County question just in
11 thinking about this further.

12 I mean, once again, I was not
13 asked to conduct a detailed evaluation of the
14 appropriateness of the totality of activities
15 undertaken by these counties, but I think
16 that it would be hard to imagine finding any
17 county in the U.S. that has -- that has
18 totally licked this one.

19 I mean, I just don't -- I mean,
20 I think that if you look at any county,
21 there's bound to be areas where one can
22 identify where there have been, you know,
23 opportunities that have been passed up,
24 whether due to resource constraints or any
25 number of other causes.

1 Q. And you don't know what any of
2 those reasons would be for Cuyahoga or Summit
3 Counties in terms of why they did what they
4 did or why they failed to do what they might
5 have done better?

6 A. That's not true.

7 Q. Do you know like what the
8 budget restrictions have been or impact of
9 budget cuts since 2008 have been in those
10 counties?

11 A. Well, it wasn't the focus of my
12 report, but in the -- in the materials that
13 I've read, it's clear that resource
14 constraints are a major issue for both
15 counties.

16 Q. Okay. And did you look at why
17 there have been resource constraints?

18 A. Can you say more about what you
19 mean by look?

20 Q. For purposes of forming an
21 expert opinion in this case that you would
22 offer at trial if called at trial, have you
23 evaluated why there have been resource
24 constraints in Cuyahoga and Summit County
25 that affected their ability to institute

1 timely and effective measures to combat the
2 opioid epidemic?

3 A. I've not done so
4 comprehensively, no.

5 Q. Does any aspect of your model
6 take into account how things would be
7 different if either or both of these counties
8 had acted reasonably in terms of combatting
9 the crisis from the first time that they
10 should have started acting to combat it?

11 MS. RITTER: Objection to the
12 form.

13 THE WITNESS: Can you ask that
14 again, please?

15 MR. ALEXANDER: I can have it
16 read back. Could you please do that.

17 (The following portion of the
18 record was read.)

19 "QUESTION: Does any aspect of
20 your model take into account how
21 things would be different if either or
22 both of these counties had acted
23 reasonably in terms of combatting the
24 crisis from the first time that they
25 should have started acting to combat

1 it? "

2 (End of readback.)

3 MS. RITTER: Then there's my
4 objection to the form, foundation. I
5 guess it shows up again.

6 A. So I developed a national
7 model. I didn't develop a county model.

8 BY MR. ALEXANDER:

9 Q. Okay. So the answer is no, no,
10 my model doesn't do that and I didn't account
11 for that?

12 MS. RITTER: Objection to the
13 form, foundation again.

14 A. Yeah, my model is not -- you
15 know, the redress estimates that I provide do
16 not factor in the ways that different
17 jurisdictions may or may not have acted most
18 efficiently in combatting the opioid
19 epidemic.

20 BY MR. ALEXANDER:

21 Q. Let me ask it this way.

22 A. Yeah.

23 Q. So you've recognized in some of
24 your questioning and in the report that some
25 of what you propose requires actions at the

1 local level, the county level, the state
2 level, the federal level, and by various
3 stakeholders, including healthcare
4 professionals and other kind of private
5 citizens and companies.

6 Is that a fair statement?

7 A. Yes.

8 Q. And so your model isn't
9 directed towards saying here are the costs
10 that would only be incurred by a certain
11 level of government, the county-level costs
12 or the federal costs or the state costs.

13 All of your costs are across
14 all of those governmental levels and include
15 private costs as well, correct?

16 MS. RITTER: Objection to the
17 form.

18 A. Yeah, my model wasn't focused
19 on figuring out who should shoulder the
20 costs; it was merely to estimate the costs.
21 So it wasn't to figure out who should
22 shoulder them or how much they're already
23 being paid for by others. It was just to
24 figure out what the costs -- it was to
25 provide a preliminary framework for thinking

1 about national costs.

2 BY MR. ALEXANDER:

3 Q. So if the question is how much
4 extra have Cuyahoga and Summit County had to
5 incur in terms of their own costs because of
6 anything relating to the opioid epidemic,
7 your model does not help answer that
8 question, correct?

9 A. Correct.

10 Q. And if the question is, going
11 forward, how much will Cuyahoga or Summit
12 County -- and/or Summit County -- have to
13 incur because of anything relating to the
14 opioid epidemic, your model also does not
15 help answer that question, correct?

16 A. I think that's incorrect.

17 Q. Because you have global costs
18 and some portion of the global costs could be
19 attributed to counties and then somebody else
20 maybe could figure out how much of that would
21 be a county cost as opposed to a state,
22 federal or private cost.

23 Is that what you're saying?

24 MS. RITTER: Objection to the
25 form.

1 A. No.

2 BY MR. ALEXANDER:

3 Q. So how does your model help
4 answer that question of how much extra,
5 not -- not just total, but how much extra
6 would Cuyahoga County have to pay to render
7 services to combat the opioid crisis, does
8 your --

9 A. Extra above and beyond what?

10 Q. What it would without an opioid
11 crisis.

12 A. Well, our estimates are
13 national estimates, and, you know, in
14 paragraph 180 or -- one paragraph that we've
15 considered --

16 Q. It's 180.

17 A. -- I provide one very
18 proxy-qualified means of thinking about what
19 costs could be in Cuyahoga and Summit County.

20 I thought previously you were
21 asking about future costs, and the reason
22 that I answered the way I did is because our
23 Markov model is designed to help develop the
24 trend ratios that help one think about future
25 costs.

1 Q. I understand the whole idea of
2 help you think, and I understand the proxy
3 thing from paragraph 180. We'll return to
4 that probably in a second.

5 A. Right. Right.

6 Q. I'm asking actually something a
7 little different and I want you to try to
8 focus on this.

9 A. Okay.

10 Q. Okay. So any county -- you
11 could go out to Baltimore County here or
12 Howard County, wherever --

13 A. Right.

14 Q. -- they pay money and they have
15 services that they render as kind of a
16 baseline. Does that make sense?

17 A. Yes.

18 Q. Okay. And if the question is,
19 above and beyond the baseline, because of the
20 opioid crisis, how much more would Cuyahoga
21 County have already paid or have to pay going
22 forward to do the reasonable things to try to
23 address it, your model doesn't answer that
24 question, correct?

25 A. Correct.

1 Q. And the same thing goes for
2 Summit County, correct?

3 A. Yes, correct.

4 Q. Okay. So your model, in
5 addition to not being local to those
6 counties, isn't addressing the issue of
7 additional costs or additional burdens,
8 services incurred by the counties because of
9 the opioid crisis, correct?

10 A. Yes.

11 Q. All right. And have you
12 compiled somewhere the list of all of the
13 state, local and federal laws that you would
14 need to change to make your plan happen?

15 A. No, I've not.

16 Q. We identified one earlier in
17 terms of there are some places where you
18 can't have these kind of safe places to
19 administer drugs, correct?

20 A. Yes.

21 Q. And we know that most of the
22 conduct that we're talking about in terms of
23 people with opioid use disorder does involve
24 some violation of state and/or federal law by
25 stealing a drug, taking a drug that wasn't

1 prescribed for you that's scheduled or taking
2 an illicit drug like heroin, right?

3 MS. RITTER: Objection to the
4 form, foundation.

5 THE WITNESS: Can you ask that
6 again, please?

7 BY MR. ALEXANDER:

8 Q. You do understand that a lot of
9 the conduct that you've talked about in terms
10 of people on opioid use -- with opioid use
11 disorder and how they get there does involve
12 some violation of state or federal law,
13 correct?

14 A. I mean, I wasn't asked to
15 apportion -- apportion responsibility or to
16 look at law-breaking as a function of how
17 people develop opioid use disorder, but I
18 believe I write in my report and I reference
19 the report by Katherine Keyes that the
20 majority of people that have opioid -- I
21 would want to be sure I'm not misstating the
22 specific reference that I make, but I do
23 highlight and refer to her report where she
24 makes a case, and I believe on reasonable
25 evidence, about how people end up with opioid

1 use disorder or other adverse --

2 Q. And I'm not asking about that.

3 MS. RITTER: You're talking on
4 top of him, please.

5 BY MR. ALEXANDER:

6 Q. Were you done with your answer?

7 A. Yes.

8 Q. Okay. I'm not even talking
9 about that. I'm saying that you understand
10 that there are various laws, state, local,
11 federal, that affect whether some or all of
12 your plan would be feasible to be carried out
13 in a specific jurisdiction, correct?

14 A. Yes.

15 Q. And you've acknowledged at
16 various parts of your report that there would
17 need to be essentially lobbying and
18 legislative efforts to make some of this
19 happen, correct?

20 A. Which specific parts are you
21 referring to?

22 Q. Let me go on, then.

23 I know that you said you're not
24 sure how deaths are tallied for purposes of
25 the CDC WONDER database to be attributable to

1 unintentional opioid overdose. Do you know
2 anything about the practices in Cuyahoga and
3 Summit Counties in terms of how they do the
4 same thing?

5 A. Not in great detail.

6 Q. Do you know if there are
7 differences between how Cuyahoga and Summit
8 County do it, including in practice versus
9 how it's done nationally, that might further
10 complicate making a comparison based upon the
11 percentage of overdose deaths?

12 A. I do not.

13 Q. Do you know if there's anything
14 going on in Cuyahoga or Summit County where
15 opioids are overattributed as a cause of
16 overdose death based upon any of the
17 practices going on in those counties?

18 A. I do not.

19 Q. If they have anything that
20 leads to them being overattributed, either
21 because of issues with how they test or their
22 evaluation in autopsy or how they treat
23 suicide or any of the other things that might
24 go into attributing death to unintentional
25 overdose, the effect would be -- the way

1 you've done it through this one proxy measure
2 in paragraph 180, would be to increase the
3 percentage of damages to these counties
4 artificially, correct?

5 MS. RITTER: Object to the
6 form, compound.

7 A. It would depend upon the
8 precision of estimates or the amount of error
9 around the estimates in these counties
10 relative to the national levels.

11 BY MR. ALEXANDER:

12 Q. So I can make it really simple.

13 If a death in Cuyahoga or
14 Summit County is more likely to be attributed
15 to opioid overdose, specifically
16 unintentional opioid overdose, than it would
17 be nationally because something about the
18 differences in practices and maybe other
19 factors and biases, then that would lead to
20 an overattribution by the proxy measure you
21 have in paragraph 180, correct?

22 A. Yes, that's correct.

23 Q. And that could lead to
24 overestimating the amount of costs for
25 abatement in those counties by billions of

1 dollars conceivably, correct?

2 A. I would have to look at the
3 numbers, but it could certainly lead to
4 overestimation, yes.

5 Q. But conceivably by a
6 significant factor, right?

7 A. Well, it would depend on the
8 magnitude of overestimation.

9 Q. Okay. Have you considered at
10 all any measures that would reduce the supply
11 of illicit drugs into this country as part of
12 your model and what effect those would have
13 on what would need to happen going forward to
14 get rid of the opioid crisis or minimize it
15 as much as it could be minimized?

16 A. Yes.

17 Q. Is that anywhere in your report
18 where you talk about interdiction and how, if
19 there's better interdiction, so that less
20 heroin comes in or less carfentanil comes in
21 or some other illegal drug, then there will
22 be less problems going forward?

23 A. I don't know that I used the
24 word "interdiction," but the answer is yes.
25 I refer both, I think as we discussed before,

1 I both refer to the importance of the Drug
2 Enforcement Agency and interventions that
3 they employ, and then I also discuss later in
4 the report within the context of law
5 enforcement the importance of overdose teams
6 that can identify and -- that can identify
7 and disrupt supply chains.

8 Q. So like, that's not actually
9 what I was asking about, but you don't have
10 an assumption for your model that assumes
11 that the supply of illegal drugs into this
12 country will remain the same as opposed to go
13 up or down, do you?

14 A. Our model does include a sort
15 of leveling-off or an inflection point
16 whereby we believe and we model -- and
17 indeed, this has been borne out a bit by CDC
18 data -- that there will be declining
19 rates of -- that the rate of increase in
20 deaths from heroin and fentanyl will decline
21 some.

22 So -- and our model also allows
23 for different assumptions about the effects
24 of interdiction to be empirically tested.

25 MR. ALEXANDER: I have limited

1 time and I'm going to pass the
2 remainder of the questioning to the
3 representative for the pharmacies.

4 THE WITNESS: Thank you very
5 much.

6 MS. RITTER: Can we get a time
7 check?

8 THE VIDEOGRAPHER: 29 minutes
9 left.

10 MS. RITTER: You had more than
11 you thought.

12 MR. ALEXANDER: I thought I was
13 out. I wouldn't have passed. My
14 goodness.

15 MR. BENSINGER: Do you want to
16 ask another question?

17 MR. ALEXANDER: If you don't
18 mind.

19 BY MR. ALEXANDER:

20 Q. Okay. Let me just ask some
21 quick questions.

22 A. Yeah.

23 Q. Are you familiar with the term
24 "breakthrough pain"?

25 A. Yes.

1 Q. And is it appropriate to treat
2 breakthrough pain with opioids in some
3 situations?

4 A. Yes.

5 Q. Are there any statements in
6 your report that you think are inaccurate,
7 any statements where you've quoted anything
8 about the role of medications in terms of
9 treating pain or any other specific
10 statements that you're aware are inaccurate
11 and need to be changed?

12 A. At the time -- I mean, at the
13 time that the report was submitted, it
14 represents my -- represented my best
15 judgments about the matters at hand, and
16 there's nothing that comes to -- there's
17 nothing that's top of mind that I would
18 correct in the week or two since it was --
19 you know, or three weeks since it was
20 submitted.

21 Q. Sure.

22 So like going back to what we
23 said about breakthrough pain and that it's
24 appropriate to treat it in some situations
25 with prescription opioids.

1 Is it your belief that it is
2 vital that prescription opioids be available
3 to treat breakthrough pain in some patients?

4 A. Yes.

5 Q. Okay. Let me ask it this way.

6 Is there any portion of your
7 model that accounts for how things would be
8 different in terms of the need for a national
9 abatement if all the actors across the
10 country, including states, federal
11 government, insurance companies, all the
12 other entities whose conduct you do talk
13 about in your report, had behaved
14 appropriately and reasonably from the start
15 to reduce the effects of the opioid epidemic?

16 MS. RITTER: Objection to form.

17 THE WITNESS: Can you ask that
18 again, please?

19 MR. ALEXANDER: Sure.

20 BY MR. ALEXANDER:

21 Q. One of the things that you
22 identified in your report, for instance, is
23 you think that there have been coverage
24 decisions of insurers --

25 A. I see.

1 Q. -- private insurers, public
2 insurers and health plans relating to like
3 when they'll pay for nonpharmacologic
4 treatment for pain, things like that.

5 That's been one of your
6 research topics about how some of those
7 decisions have actually made things worse or
8 contributed to the opioid epidemic, correct?

9 A. Yes.

10 Q. Okay. And so if we look at the
11 things that you think that the government --
12 federal government should have been doing all
13 along --

14 A. Right.

15 Q. -- and the private insurers
16 should have been doing all along and the
17 states should have been doing all along and
18 all the other stakeholders, if you will,
19 should have been doing all along to minimize
20 the effects of the opioid epidemic as you
21 understand it and have described it, you
22 think that things would be better now than
23 they are, correct?

24 A. Yes.

25 Q. Okay. And you think that less

1 measures would be needed going forward to try
2 to redress or improve the situation with the
3 opioid epidemic, correct?

4 A. Yes.

5 Q. Okay. And your model as set up
6 now doesn't address how things would be if
7 any or all of these other actors had been
8 behaving reasonably in terms of taking steps
9 to address and minimize the opioid epidemic
10 from the time that you think they should have
11 started doing that, correct?

12 A. That's correct.

13 Q. So if the question is -- so if
14 the question is what's the amount that would
15 be reasonable to address the additional
16 expenses of the counties if the counties had
17 behaved reasonably, your model as we already
18 said doesn't address that issue, both because
19 you're not looking at the counties and
20 because you're not looking at this general
21 issue of if the counties had behaved
22 reasonably, correct?

23 MS. RITTER: Objection,
24 foundation.

25 A. Yeah, I don't feel that I'm in

1 a position to provide -- at this time I
2 haven't prepared my report to focus on
3 whether or not the counties have behaved
4 reasonably, so I wouldn't want to suggest
5 otherwise. I don't -- that wasn't my point.

6 But it is the case that I did
7 not try to estimate a counterfactual, which
8 is what -- how I would refer to it, you know,
9 epidemiologically for what the costs would
10 have been but for, you know, X, Y and Z.

11 BY MR. ALEXANDER:

12 Q. Right. And you said earlier
13 that you did review some testimony but not
14 through a transcript? Did you watch a video
15 of some testimony?

16 A. I did.

17 Q. Who was that?

18 A. I don't know her name.

19 Q. In what circumstance was it?

20 A. It was -- I reviewed the
21 testimony of, I believe, a medical -- I
22 believe it was the medical examiner of Summit
23 County.

24 Q. Okay. Is that Dr. Gilson?

25 MS. RITTER: No, that's the

1 other one.

2 MR. ALEXANDER: Okay.

3 BY MR. ALEXANDER:

4 Q. So was it sworn testimony under
5 oath where people were asking questions in
6 connection with the case?

7 A. I believe it was.

8 Q. Okay. And have you reviewed
9 any other testimony from -- taken in the case
10 either by looking at a transcript or watching
11 a video?

12 A. Not that I can recall.

13 Q. And did you pick that one
14 medical examiner's video to watch or was that
15 picked for you?

16 A. I did not pick it.

17 Q. Let me just show you something.
18 This -- these are cites at the end of your
19 report, it's page 69. This correlates to
20 some cites in paragraph -- in a paragraph
21 that talks -- I guess it's paragraph 24 that
22 talks about some of what you think is going
23 on in the counties in terms of resources
24 being exerted to address social ills, if you
25 will.

1 And so you see at the top of
2 page 69, there's a reference to a series of
3 depositions, Cabot, Merriman, Johnson,
4 Tucker, Gilson, Reyes, Keenan. Do you see
5 those all in a row at the top of page 69?

6 A. I do.

7 Q. Did you actually review any of
8 those depositions?

9 A. I did not.

10 Q. Any idea how you have citations
11 to specific pages and lines in their -- from
12 their depositions in your report to talk
13 about specific propositions for what's going
14 on in the counties?

15 A. I believe that I requested --
16 you know, I reviewed a number of source
17 documents from the counties, and I believe
18 that these were references that I may have
19 requested from counsel to help support the --
20 the statements that I was making.

21 Q. So other than the Summit County
22 medical examiner, whose video you watched at
23 least some part of it, you don't actually
24 know what any of the sworn testimony any of
25 the current or former employees of Summit or

1 Cuyahoga Counties say about any of the issues
2 addressed in your report, including what
3 they've actually been doing or what their
4 burdens have been, correct?

5 A. No, I believe that's correct.
6 My sources of information about Summit and
7 Cuyahoga County were based on my trip there
8 as well as the review of many different
9 written reports, and those reports I believe
10 have been provided as resources here.

11 I may well have interacted with
12 people who were deposed. And the course of
13 those -- the meeting in Akron and the reports
14 that I reviewed may well have been provided.
15 For example, I reviewed a medical examiner's
16 report, so the reports that I reviewed may
17 well have been provided by people who
18 subsequently provided sworn testimony.

19 But I did not -- I do not
20 believe that I've reviewed the sworn
21 deposition of the -- that's represented by a
22 reference such as reference 91.

23 MR. ALEXANDER: At this time
24 I'm actually switching for real. This
25 is not a fake out. Switching

1 questioning to another defendant.

2 MS. RITTER: Thank you very
3 much.

4 EXAMINATION

5 BY MR. BENSINGER:

6 Q. Dr. Alexander, my name is Peter
7 Bensinger Jr. I represent Walgreens.

8 Could you refer to Exhibit 1,
9 your April 3rd, 2019 expert report. Do you
10 have it there?

11 A. Yes, sir.

12 Q. Would you turn to page 7,
13 please. Paragraph 25, do you have it?

14 A. Yes, sir.

15 Q. In the middle of that
16 paragraph, you write: Historical precedent
17 suggests that the current crisis can be
18 successfully reversed with a multi-faceted
19 approach that addresses the root causes of
20 the epidemic, including misleading marketing
21 and promotion and widespread overprescribing,
22 while also investing in treatment and
23 recovery.

24 Do you see that?

25 A. Yes, sir.

1 Q. I want to ask you a question
2 about your reference to widespread
3 overprescribing.

4 When you refer to
5 overprescribing, you're referring there to
6 prescriptions written by doctors, correct?

7 A. Well, or other licensed
8 prescribers.

9 Q. Is there a licensed prescriber
10 who's not a doctor?

11 A. Yes, sir.

12 Q. You're referring to people who
13 are authorized by the DEA to write
14 prescriptions?

15 A. Yes, sir.

16 Q. And with respect to the
17 overprescribers who are persons authorized by
18 DEA to write prescriptions, are you here
19 referring to prescriptions written to
20 patients where there's a determination they
21 need opioids for medical reasons?

22 A. I mean, I'm referring to -- so
23 you asked whether I'm referring to
24 prescriptions for patients where the
25 clinician has made a determination that

1 opioids are -- should be used?

2 Q. Yes.

3 A. Yes, I am.

4 Q. You are not referring to
5 pharmacists when you refer to overprescribing
6 in your report, correct?

7 A. In this instance, no.

8 Q. What I stated is correct; you
9 are not referring to pharmacists with respect
10 to overprescribing as you used the term in
11 paragraph 25?

12 A. Yeah, here I'm referring just
13 to licensed prescribers. Pharmacists are a
14 part of the overall system, but here, I'm
15 referring just to prescribers.

16 Q. Pharmacists are not licensed
17 prescribers, correct?

18 A. Correct.

19 Q. Okay. If you turn now to
20 page 10 in your April 3rd report, which is
21 Exhibit 1, referring you to paragraph 33. Do
22 you have it?

23 A. Yes, sir.

24 Q. Here you write: A related
25 misconception is that the epidemic is largely

1 driven by devious individuals such as rogue
2 physicians and patients who are doctor
3 shoppers.

4 Do you see that?

5 A. Yes, sir.

6 Q. What's a doctor shopper?

7 A. Well, casually, it's a term
8 used to refer to individuals that may seek
9 controlled substances in this context from
10 multiple physicians or multiple prescribers
11 or pharmacies.

12 Q. And you refer here to "bad
13 actors."

14 Do you see that in quotes?

15 A. Yes.

16 Q. What did you mean by bad
17 actors?

18 A. I meant individuals that are
19 egregiously, you know, sort of orders of
20 magnitude beyond usual standards of care.
21 You know, by any standard, individuals who --
22 I mean, for example, a, quote/unquote, pill
23 mill doctor.

24 Q. All right. You -- in Figure 4,
25 you have a chart captioned Opioid Shoppers

1 Dwarfed By Other High-Risk Patient Groups.
2 Many High-Risk Patients Get Opioids from
3 Low-Volume Prescribers.

4 Do you see that?

5 A. Yes, sir.

6 Q. Can you explain what this chart
7 shows with respect to the opioid shoppers
8 being dwarfed by other high-risk patient
9 groups?

10 A. Yes.

11 Q. What's important here?

12 A. In looking at this population
13 of individuals, the proportion of individuals
14 who were at risk from opioids because they
15 are, for example, at -- at
16 higher-than-average risks from opioids
17 because, for example, they're combining them
18 with benzodiazapines or because, for example,
19 they're on chronic, I believe here, high-dose
20 opioids.

21 Those are much greater
22 proportions of the universe of opioid
23 recipients than the proportion of the
24 universe of opioid recipients that we
25 identified using this study and the

1 assumptions of this study that are opioid
2 shoppers.

3 Q. And that's why you write in
4 paragraph 33, quote: In other words,
5 individuals such as doctor shoppers represent
6 a very small proportion of people who are at
7 high risk for opioid-related adverse events,
8 and they also account for a small proportion
9 of prescription opioids entering the general
10 circulation; is that right?

11 A. Yes, sir.

12 Q. If you turn, please, to
13 page 24, paragraph 72. Tell me when you have
14 it.

15 A. Okay.

16 Q. You refer in this paragraph to
17 a prevalent yet insidious stigma that erodes
18 effective community responses to the opioid
19 epidemic.

20 Do you see that?

21 A. Yes, sir.

22 Q. And elsewhere in your report
23 you refer to stigma. Do you recall that?

24 A. Yes.

25 Q. When you use the term "stigma"

1 in connection with the opioid epidemic, what
2 do you mean? What are you referring to?

3 A. I'm referring to the manner in
4 which individuals, organizations,
5 communities, societies, conceptualize and
6 treat people that have opioid use disorder
7 or, indeed, nonmedical use of opioids.

8 Q. And you found that the stigma
9 can discourage patients from seeking
10 treatment, correct?

11 A. I believe that's the case, yes.

12 Q. You found that the stigma can
13 discourage clinicians from providing
14 treatment as well, correct?

15 A. Yes, that's my belief.

16 Q. You've also found that stigma
17 affects law enforcement first responders,
18 correct?

19 A. Yes, that's my belief.

20 Q. You also believe that the
21 stigma affects referrals for services for
22 those with opioid use disorder, correct?

23 A. Yes, sir.

24 Q. I want to now ask you questions
25 about Exhibit 3, which is the supplemental

1 expert report update of April 17th, 2019.

2 Do you have it?

3 A. I'm sure I can find it here,
4 thank you. Yes, sir.

5 Q. At the top you write: Table 1
6 represents changes to the redress models used
7 to develop preliminary estimates of the
8 national abatement costs to address the
9 opioid epidemic. Please refer to
10 paragraphs 176 through 180 in my report for
11 additional details.

12 Do you see that?

13 A. Yes, sir.

14 Q. When you refer to "my report"
15 in that sentence, to which report are you
16 referring?

17 A. The most recent that was
18 submitted that this updates, namely, the
19 supplemental report.

20 Q. Is that the one we've marked as
21 Exhibit 1 dated April 3rd, 2019?

22 A. Yes, sir.

23 Q. What caused you to make changes
24 to certain items of your redress model?

25 A. I believe we've discussed that,

1 but I felt that there were better estimates
2 that could be provided.

3 Q. Did somebody suggest to you
4 that you should update the redress model that
5 you originally submitted on March 25th, 2019?

6 A. No, sir.

7 Q. You concluded that on your own?

8 A. Yes, sir.

9 Q. As a result of what?

10 A. As a result of my review of the
11 materials that were submitted.

12 Q. You hadn't reviewed materials
13 submitted before you actually submitted your
14 March 25, 2019 report?

15 MS. RITTER: Objection, form.

16 THE WITNESS: Can you ask
17 again, please?

18 BY MR. BENSINGER:

19 Q. When you said a moment ago you
20 hadn't reviewed materials submitted, to what
21 were you referring?

22 A. I don't believe I said that I
23 hadn't reviewed materials submitted.

24 Q. When you were inspired to
25 change your report, was it because you

1 reviewed additional materials after you
2 submitted your initial report on March 25th,
3 2019?

4 A. The reason I submitted a
5 supplement and an update to the supplement in
6 both instances were because of a combination
7 of my reviewing the materials that I had
8 submitted as well as source documentation to
9 support those.

10 Q. So you wanted a do-over after
11 the initial submission based on further
12 reflection?

13 A. Well, I'm not sure I would
14 characterize it as a do-over, but I felt that
15 there were better estimates and I wanted to
16 have my best estimates for the courts to
17 consider.

18 Q. Let me ask you now a question
19 about page 25 of your April 3rd report. This
20 is Exhibit 1. I want to refer you to
21 paragraph 73. Tell me when you have it.

22 A. Yes, sir.

23 Q. Here you're discussing safe
24 storage and drug disposal guidelines,
25 correct?

1 A. Yes, sir.

2 Q. And the problem you identify
3 here is that there's an overstock of opioids
4 that people retain; is that correct?

5 A. Yes, sir.

6 Q. They don't actually use them
7 for medical purposes, but they're lying
8 around afterwards and then are used for
9 nonmedical purposes?

10 A. Yes, sir.

11 Q. But in the instance where
12 you're discussing the problem of overstock,
13 in the first instance, those prescriptions
14 were written by licensed prescribers?

15 A. Yes, sir.

16 MR. BENSINGER: I don't have
17 any additional questions at this time.

18 THE VIDEOGRAPHER: Going off
19 the record, 5:25 p.m.

20 (Recess taken, 5:25 p.m. to
21 5:34 p.m.)

22 THE VIDEOGRAPHER: We're back
23 on the record at 5:34 p.m.

24 MR. MORRIS: Dr. Alexander,
25 thank you for your time so far today.

1 A. Thank you.

2 EXAMINATION

3 BY MR. MORRIS:

4 Q. My name is Sean Morris. I
5 represent one of the manufacturer defendant
6 groups.

7 You talked today about
8 abatement of the epidemic or the crisis. As
9 part of your opinion, do you have a measure
10 by which you were going to -- or propose to
11 determine success of your abatement program?

12 In other words, I'm used to
13 dealing with environmental cases where you
14 have a groundwater cleanup, say, and there
15 are defined sets of things that need to be
16 done and that's how you measure success.

17 Do you have an opinion about
18 that for your abatement program?

19 A. The interventions that I've
20 proposed work and there's consensus about
21 that, and if they're implemented in a
22 coordinated fashion, I believe they will lead
23 to large reductions in opioid-related
24 morbidity and mortality.

25 I've not developed a

1 specific -- and I also emphasize in my report
2 the importance of surveillance and local
3 leadership and ongoing evaluation of
4 abatement programs.

5 So if you're asking if there's
6 a concrete number that I have where I would
7 say, well, we've been successful or not
8 successful based on achieving X, I don't have
9 a single number. I think communities need to
10 develop these programs and their evaluation
11 metrics as well.

12 Q. Okay. So to put it another
13 way, there's not a set of numbers or
14 specifications that you are seeking to
15 achieve though your abatement plan?

16 A. Well, I'm just a small part of
17 this. I'm just providing my expertise to the
18 courts and my best evaluation, so, you know,
19 my best recommendation.

20 So I wasn't asked -- I was not
21 asked as part of the materials that I
22 prepared to provide such a number, but I
23 would certainly do so if I was asked to do
24 so.

25 Q. And I understand that you're

1 describing yourself as part of the piece of
2 this, perhaps, but the abatement numbers and
3 proposals as part of your report that you
4 have are a significant number of dollars.

5 And so I'm wondering -- I'm
6 just exploring whether or not there are ways
7 that you are providing as part of your
8 opinion that are going to measure by actual
9 metrics the way in which there is a success
10 or not with those programs.

11 A. Yeah.

12 Q. And my understanding is that
13 you're saying you do not have that as part of
14 your plan, correct?

15 A. No, I would not say that. I
16 think there are -- I speak in my report to
17 the return on investment, so I speak in my
18 report to the -- to the -- what we know about
19 some of the economics of these interventions
20 in terms of their worth, their return on
21 investment.

22 We also in the Markov model
23 provide estimates for the magnitude of
24 reductions that we believe can be achieved in
25 ten years with coordinated comprehensive

1 intervention of these programs.

2 These estimates are in line
3 with those of other estimates that have been
4 provided by other teams using Markov models,
5 and as one example that I think I gave
6 earlier today, with investments in medication
7 treatment and other services for individuals
8 with opioid use disorder, as well as fairly
9 modest reductions in opioid prescribing and
10 in naloxone distribution, I estimate that we
11 could reduce as many as 40% of overdose
12 deaths in the next ten years.

13 Q. As part of your plan, do you
14 have, though, a measure by which you will
15 have achieved success?

16 A. Thus far I have not been asked
17 as part of my expert report to provide such
18 information.

19 Q. As part of your plan, the
20 numbers that you're talking about of the
21 dollars that would be used for abatement, do
22 you have an opinion about where are those
23 dollars going to go, meaning -- and I don't
24 mean like for what programs. Literally, who
25 is going to administer the program?

1 A. I've not been asked to provide
2 my thoughts about that to the court at this
3 time.

4 Q. Okay. So you're not proposing
5 that there be some sort of fund set up where
6 these dollars get put into and then used?

7 A. No, I've not developed a -- you
8 know, a strategic action plan for the
9 disbursement of funds as part of the
10 materials that I've developed for the report
11 thus far.

12 Q. Okay. As part of your
13 abatement plan, there are aspects of it where
14 there are individuals who are going to
15 receive treatment through these dollars,
16 correct?

17 A. Yes, sir.

18 Q. Okay. And those are actual
19 individuals that will be receiving treatment;
20 those aren't just statistics, correct?

21 A. Yes. Yes, sir. That's exactly
22 right.

23 Q. Right.

24 And so I understand from your
25 testimony that there -- you're not providing

1 an opinion about whether any particular
2 defendant or any other group is -- what
3 portion of responsibility they may have for
4 the abatement plan that you're proposing?

5 A. That's correct.

6 Q. But there are going to be --
7 since there are going to be individuals who
8 are treated, there are going to be some
9 individuals who are going to receive
10 treatment as part of your plan that have no
11 connection at all to the defendants in this
12 case, correct?

13 MS. RITTER: Objection.

14 BY MR. MORRIS:

15 Q. For example, someone five years
16 from now who may receive treatment under your
17 proposed plan who started off on an opioid
18 that was not a prescription opioid but
19 instead was an illegal fentanyl, that has
20 nothing to do with the defendants in this
21 case, correct?

22 MS. RITTER: Objection, form,
23 foundation.

24 A. I'm not sure that I would say
25 that has nothing to do with the defendants in

1 this case, but as I highlighted earlier, our
2 estimated costs for treatment exclude the
3 costs of treating the population that has
4 heroin or illicit fentanyl use that was not
5 preceded by prescription opioid use.

6 MS. RITTER: The bell has rung.
7 It's perfect. You got that big
8 question.

9 MR. MORRIS: Okay. I
10 understand, and, Doctor, thank you for
11 your time. I'll simply note for the
12 record that we object -- it's all over
13 the papers, but for the purpose of
14 keeping it on the record, we object to
15 the limitation of the seven hours but
16 understand that those are the rules
17 that we're operating under per the
18 court, and I personally thank you for
19 your time today.

20 THE WITNESS: Thank you very
21 much. I appreciate the opportunity.

22 MR. REATEGUI: This is Bruno
23 Reategui, counsel for the Teva
24 defendants. I would like to place a
25 due process violation on the record

1 for not being able to ask questions in
2 any meaningful way today. That is
3 all.

4 MS. RITTER: That's between you
5 guys.

6 Cuyahoga has counsel on by
7 phone. Does Cuyahoga have any
8 questions, if they're still on? Sal?

9 MR. CIACCIO: No. This is Joe
10 Ciaccio for Cuyahoga, but we don't
11 have any questions.

12 MS. RITTER: Okay. Neither do
13 we. Thank you very much.

14 THE VIDEOGRAPHER: This ends
15 today's deposition. We're going off
16 the record at 5:42 p.m.

17 (Proceedings recessed at
18 5:42 p.m.)

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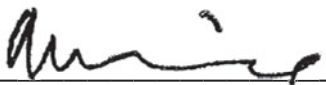
CERTIFICATE

I, MICHAEL E. MILLER, Fellow of the Academy of Professional Reporters, Registered Diplomate Reporter, Certified Realtime Reporter, Certified Court Reporter and Notary Public, do hereby certify that prior to the commencement of the examination, G. CALEB ALEXANDER, M.D., M.S. was duly sworn by me to testify to the truth, the whole truth and nothing but the truth.

I DO FURTHER CERTIFY that the foregoing is a verbatim transcript of the testimony as taken stenographically by and before me at the time, place and on the date hereinbefore set forth, to the best of my ability.

I DO FURTHER CERTIFY that pursuant to FRCP Rule 30, signature of the witness was not requested by the witness or other party before the conclusion of the deposition.

I DO FURTHER CERTIFY that I am neither a relative nor employee nor attorney nor counsel of any of the parties to this action, and that I am neither a relative nor employee of such attorney or counsel, and that I am not financially interested in the action.


MICHAEL E. MILLER, FAPR, RDR, CRR
Fellow of the Academy of Professional Reporters
NCRA Registered Diplomate Reporter
NCRA Certified Realtime Reporter
Certified Court Reporter

Notary Public

My Commission Expires: 7/9/2020

Dated: May 1, 2019

1 INSTRUCTIONS TO WITNESS

2
3 Please read your deposition over
4 carefully and make any necessary corrections.
5 You should state the reason in the
6 appropriate space on the errata sheet for any
7 corrections that are made.

8 After doing so, please sign the
9 errata sheet and date it.

10 You are signing same subject to
11 the changes you have noted on the errata
12 sheet, which will be attached to your
13 deposition.

14 It is imperative that you return
15 the original errata sheet to the deposing
16 attorney within thirty (30) days of receipt
17 of the deposition transcript by you. If you
18 fail to do so, the deposition transcript may
19 be deemed to be accurate and may be used in
20 court.

	ERRATA		
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1 ACKNOWLEDGMENT OF DEPONENT

2

3

4 I, G. CALEB ALEXANDER, M.D., M.S.,
do hereby certify that I have read the
5 foregoing pages and that the same is a
correct transcription of the answers given by
6 me to the questions therein propounded,
except for the corrections or changes in form
7 or substance, if any, noted in the attached
Errata Sheet.

8

9

10

11

12

G. CALEB ALEXANDER, M.D., M.S. DATE

13

14

15 Subscribed and sworn to before me this
16 _____ day of _____, 20 ____.

17 My commission expires: _____

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20 _____
Notary Public

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